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ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES

NEW SCHOOLS FOR OLD

50th ANNIVERSARY YEAR

JUN 2 3 1941

ARCHITECTURAL record

JUNE 1941

★ ★ ★ GOVERNMENT JOB! ★ ★ ★

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BUILT by The Sims Company, Inc., of Erie, Pa., this 48″ x 144″ Everdur storage heater recently went to work in the U. S. Veterans' Administration Building at Hot Springs, South Dakota. Its job: to eliminate expensive rust repairs; to deliver rust-free hot water for a good many years to come.

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ARCHITECTURAL RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOLUME 89 JUNE 1941 NUMBER 6

NEWS AND TRENDS

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Next Month

"VACATION HOUSE" may mean a large Winter home, log cabin or lakeside cottage. For July we're planning a 20-page portfolio that includes the best examples we have seen of these varied types—in Connecticut, the Adirondacks, Florida, Tennessee, Oregon and California. All are outstanding, for plan, use of materials, or utilization of the site.

News features will include the 12-story and penthouse Shelbourne Hotel in Miami Beach, with a plan that gives 11 out of 13 rooms on every floor an ocean view; the Stern Research Building in San Francisco, noteworthy for movable partitions and a perimeter floor area left clear of structural elements. Also a North Carolina bottling plant, a printing plant in Texas, a Long Island post office and a reinforced concrete theatre in Hollywood.

The Building Types Study will cover that vast class of retail establishments where service is more important than merchandise. We've uncovered intensely interesting examples: laundries where high cost of distribution is met by "drive-in" service; automobile sales establishments where more planned space for repairs offsets lower profits on car sales. How such problems are solved makes a B. T. Study that ranges from beauty shops to service stations, with great practical value for architects. It is being prepared with the help of *Morris Ketchum, Jr.*, a store architect with wide experience in this field.

Editorial Director: Thomas S. Holden. *Editors*: Roger Wade Sherman, A.I.A. (*Managing*), James M. Fitch, Jr. *Associate Editors*: Elisabeth Kendall, Frank G. Lopez, Jr., George A. Sanderson. *Art Director*: Gene Hawley. *Desk Editor*: Catherine Woolley.

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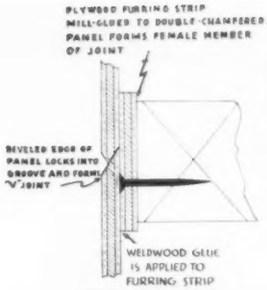
Manuscripts, photographs, and drawings which conform to RECORD'S editorial aims are welcomed. Every effort will be made to return material (if accompanied by stamped, addressed envelopes); but the editors will not be responsible for losses.

Other Dodge Services: REAL ESTATE RECORD, SWEET'S CATALOG FILES, HOME OWNERS' CATALOGS, DODGE REPORTS, and DODGE STATISTICAL RESEARCH SERVICE.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BEHIND THE RECORD

Our sense of fair play prompts us to publish an unusual letter from *Albert Chase McArthur*, architect, of Hollywood, Calif., and also *Frank Lloyd Wright's* note to which Mr. McArthur refers. The matter of correct professional credit is still important to practicing architects; and though no controversy whatever exists in this particular instance, we think all architects will agree that in publicizing the following the RECORD is serving the best interests of the entire architectural profession as well as those of two outstanding members:

* * *

Your kindness of 1929, in devoting a large part of one of your issues to the Arizona Biltmore Hotel (A.R. 7/29), prompts me to write you concerning the situation in which I have been placed with respect to that project.

During the last year two books have appeared, both published by reputable houses, in which it is unequivocally stated that the architect of the Biltmore was Frank Lloyd Wright, one of them mentioning me not at all, the other stating that the construction was carried out under my supervision.

1. "Our Southwest," by Erna Fergusson (Alfred Knopf, N. Y., 1940), contains a statement of about 300 words (p. 168), in which there are at least seven assertions which are direct contradictions of easily ascertainable correct information.

2. "Arizona, a State Guide," by the Writers' Project, WPA, under sponsorship of the State Teachers' College at Flagstaff, Ariz., (Hastings House, N. Y., 1940), refers to the Biltmore (p. 146): "The original scheme is the work of Frank Lloyd Wright, but the building was erected under the supervision of Albert McArthur, a former apprentice of Wright." Another reference (p. 354) states that it is the work of Wright, without mentioning me at all.

Such rumors have been current for several years. Now that these false statements have found their way into the public record, I am placed in an equivocal position. In response to letters, in which I stated the facts concerning the Biltmore in full detail, written to both authors and publishers of the two books, I have re-received either no reply or vague promises about rectifications in future editions. This renders it necessary for me to make public denial of such irresponsible statements.

I have in my possession, besides all the originals of the plans, details, specifications, contracts, and correspondence incident to the project, sufficient other documents to prove that I was the architect of these buildings, and that Mr. Wright's relation to the project was no more than that of a private consultant to me, and to me only, for the specific purpose of the technical application of his invention, the "Textile-Block-Slab Construction."

More than a year after the final completion of construction and the opening of the hotel, anticipating controversy from other sources not connected with Mr. Wright, I asked Mr. Wright for a statement of our relations. He sent me the letter, photostatic copy of which I enclose herewith. This document alone should be sufficient to dispel any doubts as to the authorship of this project.

No doubt this must be as embarrassing to Mr. Wright as to me. Certain it is that he has never publicly claimed the Biltmore as his work. It is not included in the list of his works given in another architectural magazine (Architectural Forum) of January 1938, an issue devoted entirely to his works. In his *Autobiography* he mentions it, giving full credit to me.

My sole aim in presenting these facts is to clear a situation that has given me no end of spiritual pain, as well as injury to my reputation as an architect, and my hope is that I may be justified.—*Albert Chase McArthur.*

* * *

All I have done in connection with the building of the Arizona Biltmore, near Phoenix, I have done for Albert McArthur himself at his sole request, and for none other.

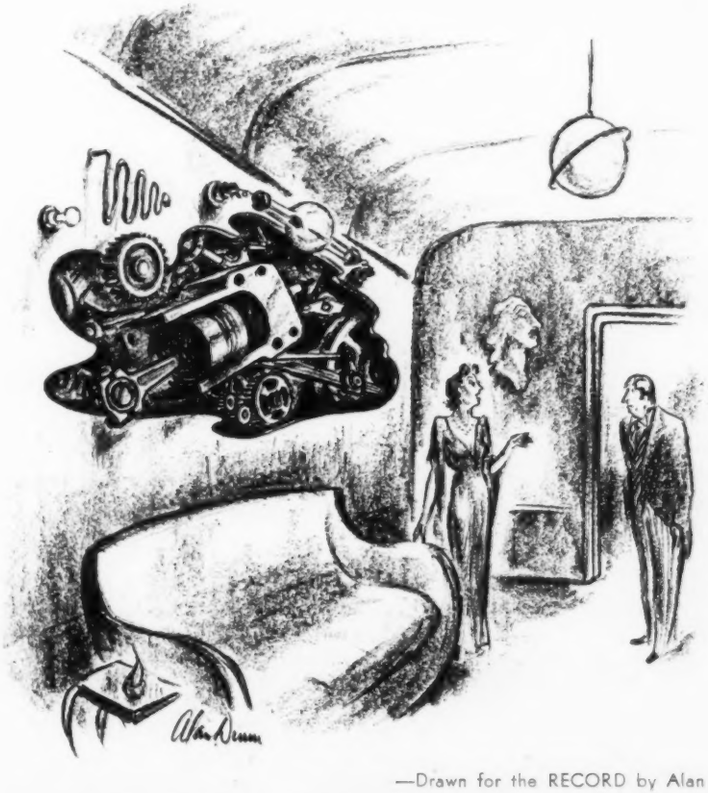
Albert McArthur is the architect of that building—all attempts to take the credit for that performance from him are gratuitous and beside the mark.

But for him, Phoenix would have had nothing like the Biltmore, and it is my hope that he may be enabled to give Phoenix many more beautiful buildings as I believe him entirely capable of doing so. —*Frank Lloyd Wright.*

* * *

The following letter caught us with a bad case of spring fever, and set us

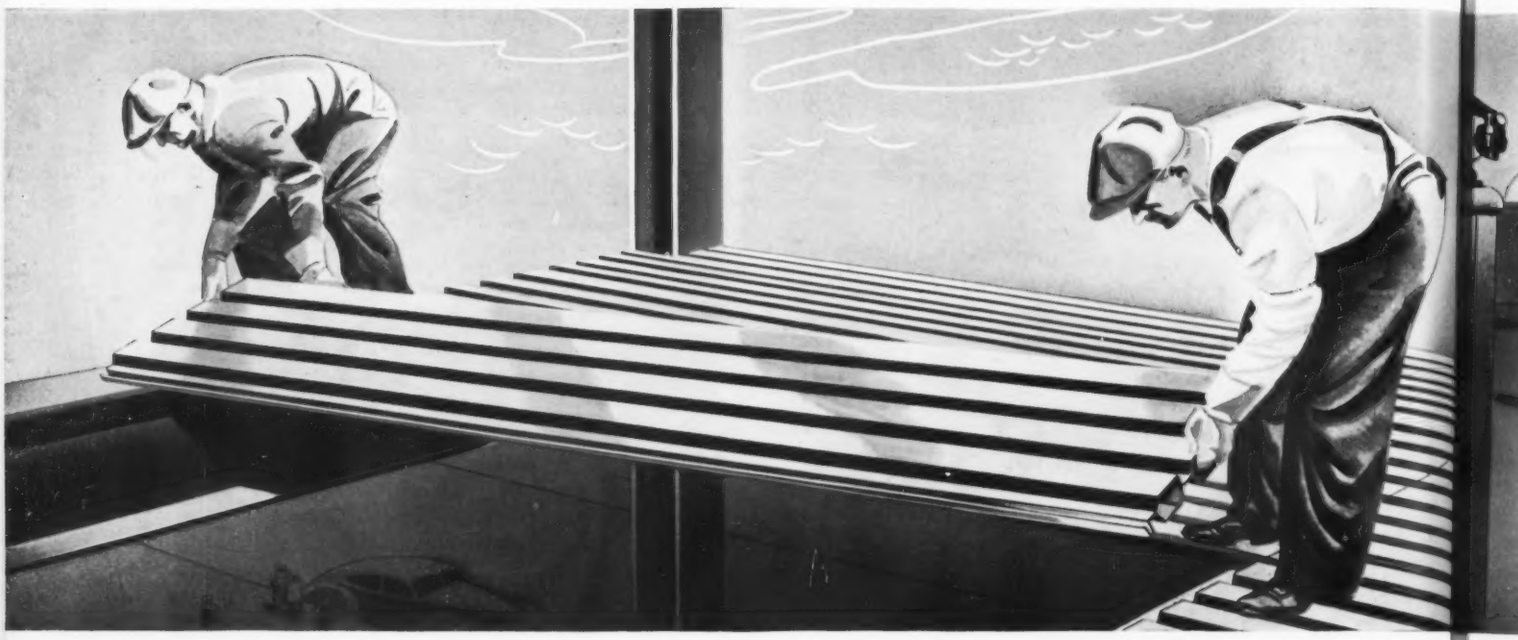
(Continued on page 10)



—Drawn for the RECORD by Alan Dunn

"You may turn on the mural, Drummond, I expect company."

QUICK-IN FLOORS



QUICK-IN!

32 square feet in 30 seconds... ready for other trades to work on...

Defense can't wait on time-consuming methods of construction. Floors, ordinarily, *slow up* construction. They are usually weeks or months behind steel erection and keep other trades waiting. You've often heard contractors say, "If we could only speed up the floors, we'd soon be off the job."

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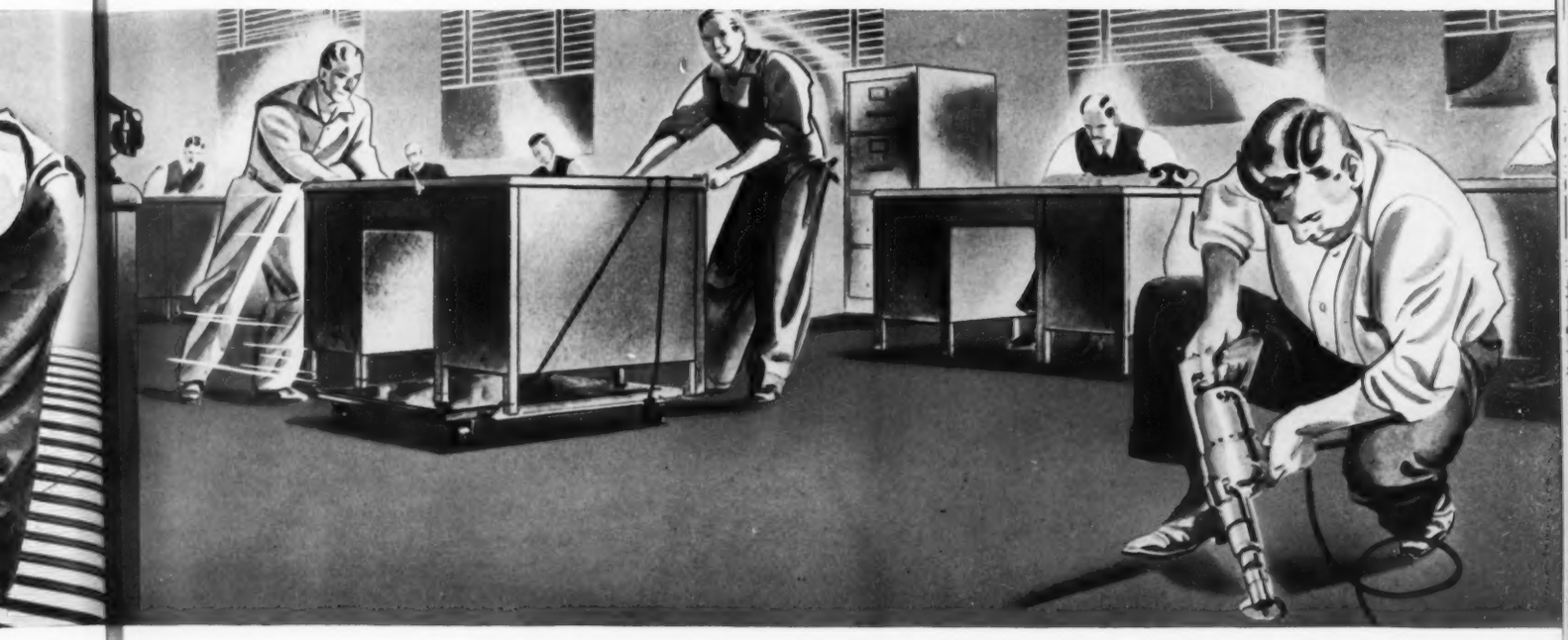

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If you, your engineers, draftsmen or specification writers should desire engineering details, construction data, cost estimates or specifications, information is easily and quickly available through literature, catalogs or personal presentations by Robertson Engineers. Contact the nearest office... there are Robertson Organizations and Sales Agencies in principal cities.

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Q—FLOORS

QUICK-CHANGE

BEHIND THE RECORD

(Continued from page 7)

dreaming all about far places and South American adventure with *Richard Harding Davis* keeping the news wires hot. Its message isn't for us, but RECORD readers who remember those 200 miles of "Green Hell" will probably want to write to *John H. Armitage*, 1103 Russell Road, Alexandria, Va. He is Informational Representative of the Madeira-Mamore Association, formed by those who first brought the iron horse through the jungles of Brazil.

* * *

We are continuing our effort to ascertain the whereabout of more survivors of the construction of the Madeira-Mamore Railway in Brazil. Many of these were civil engineers and some, surely, would be informed directly, or indirectly, of this Association by a few appropriate words in the RECORD.

You may recall this project, but a few words will refresh the recollection. The railway is a by-pass around the Great Falls of the Madeira River, extending from Porto Velho, westwardly, to Guajaramirim, on the Mamore River opposite Bolivia and traverses 200 miles of the "Green Hell" jungle of the South American Matto Grosso, or great forest. This task was begun in 1907 and completed in 1913; many hardships were overcome and much adventure encountered. Bob Ripley cartooned it as the "Road to Ruin," because of expense and high death rate, having in mind and including the earlier attempts—in the '70's—which began at Santo Antonio, just south of Porto Velho, on the Madeira River. A glance at the map will locate the route.

We have at this time a membership of about 200; it should be twice as many, for several thousand were on the job during the period.

A reunion will be held this year and we wish this information to reach every one of the boys who shared our perils.

WITH RECORD READERS

NEW STATLER HOTEL FOR WASHINGTON, D. C.: The architects for this new 1,000-room hotel in the nation's capital are Holabird & Root of Chicago and A. R. Clas of Washington. Eighth in the chain of hotels owned or operated by the Hotels Statler Company, Inc., the Washington Statler will be located on 16th Street between K and L Streets. Completion is scheduled for the summer of 1942. Among unique features of the design will be an inside automobile drive that will carry traffic literally through the building from K to L Streets. The Grand Ballroom on the second floor will accommodate approximately 2,000 dinner guests, or 3,500 when the room is used for meetings. The entire hotel will be air-conditioned both winter and summer—the largest air-conditioned hotel in the world. The approximate total cost of the building will be $8,500,000

N.Y.U. Closes School of Architecture

UNLESS a campaign now under way saves New York University's School of Architecture and Allied Arts, the end of the Spring semester and retirement of Dean *E. Raymond Bossange* has brought to a permanent close New York State's largest architectural school. The university decided to close the 15-year-old school to save a $30,000 to $50,000 yearly deficit incurred by its maintenance. While chief cause of the deficit is given as the rental and maintenance of two floors in a building that is not a tax-free educational structure, a pessimistic note was found in Dean Bossange's letter to a committee seeking aid to keep the school open.

"We must admit," he said "the profession has slipped badly since engineers were allowed to file drawings. Further, much work is now done under government control, many corporations have an architectural department in their organization, and in the last year 'designers' and decorators have become aggressive competitors, so the prestige of the profession has suffered."

Dean Bossange came to N.Y.U. in 1926 from Princeton, where he was Director of the School of Architecture, to organize an architectural department. He has increased the enrollment from 33 to 500 students.

Post-Bellum City

INVULNERABILITY to air attack, rather than post bellum social economy, primarily concerns *Nathaniel C. Curtis*, Professor of Architecture at Tulane University, who recently related plans which he is making for a city of the future to the New Orleans States Special News Service.

"The city as we know it today must vanish," Professor Curtis said. "Its individual industrial facilities and units of population must be scattered."

Taking shelter underground cannot be the only defensive measure, he asserted. The planner will do an about-face and begin to disperse industrial and civil life. Replacing river bridges with tunnels and burrowing production plants beneath the ground will be part of his task.

(Continued on page 12)

This is one of a series of advertisements telling what leading Consulting Engineers think of modern steam heating.

Albert L. Baum, of Jaros, Baum & Bolles, New York Consulting Engineers. B. A., M. E., Columbia University. Member of American Society of Heating & Ventilating Engineers.

"Economy is the watchword of all good planning—economy in installation costs as well as economy in operation," writes Albert L. Baum. "With this in mind, we have planned for controlled steam heating systems in many of our designs, and have found such steam heating systems especially successful in small rural hospitals. The outstanding advantages, particularly for hospitals, of such controlled steam heating are the variability of heat output as required by weather changes and the quick response to heating demands coupled with the savings in steam consumption."

▲

Jaros, Baum & Bolles have specified modern steam heating for many prominent installations, among them the Delaware Hospital, Wilmington, Del., and the Holston Valley Community Hospital, Kingsport, Tenn., both of which have "Controlled-by-the-Weather" Webster Moderator Systems of Steam Heating.

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Pioneers of Vacuum System of Steam Heating
Est. 1888 : : Representatives in 65 U. S. Cities

STEAM Heats America . . . .

WITH RECORD READERS

(Continued from page 10)

In a description of the typical house in his "defense" city, Professor Curtis explained that a feasible plan will be to construct it in two parts—one section so flimsily built it will yield to a bomb blast rather than resist it, escaping irreparable damage. The other section, containing sleeping quarters, is to be a "solidly constructed shelter."

Elisabeth Coit Suggests Home Survey

WHAT do house dwellers like and dislike about their homes? A good way to find out is to ask them, perhaps through questionnaires issued by the General Federation of Women's Clubs. Such a study program was suggested by *Elisabeth Coit*, AIA—New York architect and ARCHITECTURAL RECORD'S book critic—in a nationwide broadcast April 2. Issued in various localities and analyzed by AIA, such questionnaires should interest not only architects but the Federal government, state and local health and educational groups, builders, contractors and real estate dealers, Miss Coit pointed out. She cited studies by the University of Oregon and the Women's City Club of New York as yielding useful information on the subject.

Miss Coit was presented on "The Woman's Page of the Air," feature of the Columbia Broadcasting System "edited" by *Adelaide Hawley*.

Competition for Posters

PRIZES totaling $2,000 will be awarded in a Competition for Posters for National Defense, announced by *John Hay Whitney*, president of the Museum of Modern Art, New York City. Two first prizes of $500 will be awarded: for a poster for the Treasury Department, to urge the buying of defense bonds; for a poster to be used by the U. S. Army at recruiting stations. There is reason to believe the designs will actually be used by these departments, and further commissions for Government work are expected to go to winning designers. Entries must be submitted anonymously by June 28. Program of the competition may be obtained from *Eliot F. Noyes* of the Museum of Modern Art.

Producers' Council Elects Plimpton

F. J. PLIMPTON of the Vermont Marble Company, New York City, was elected president of the Producers' Council at the Council's annual meeting, which opened May 7 in Chicago. He succeeds *Albert B. Tibbets* of the National Lead Company of New York.

A meeting the the State Associations of the Producers' Council was held in Yosemite and Los Angeles simultaneously with the AIA convention.

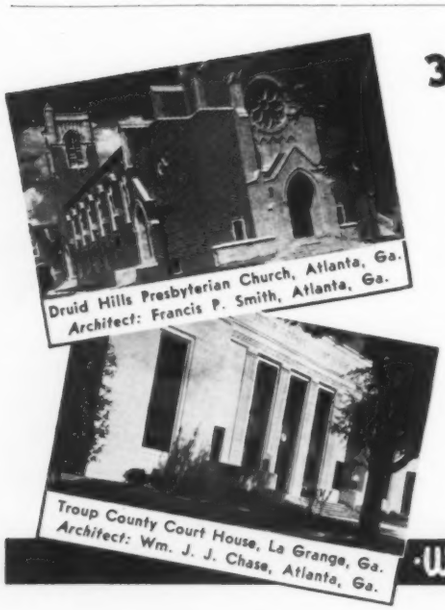
Awards

To *Nicholas Carone* of Hoboken, N. J., and *William Talbot*, Creve Coeur, Mo., both 23, went the two $1,000 awards for painting and for sculpture of the American Academy in Rome. Carone has studied at the National Academy of Design, Art Students' League and Leonardo da Vinci Art School, New York. Talbot attended the Demetrios School in Boston and is now a student at the Pennsylvania Academy of the Fine Arts, Philadelphia. These competitions were two of a series which the Academy has been holding to encourage young artists, since conditions prevent the sending of fellows to Rome.

* * *

THE MCKIM FELLOWSHIP, bestowed every three years by the Columbia University School of Architecture.

(Continued on page 14)


Druid Hills Presbyterian Church, Atlanta, Ga.
Architect: Francis P. Smith, Atlanta, Ga.
Troup County Court House, La Grange, Ga.
Architect: Wm. J. J. Chase, Atlanta, Ga.

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Hot water is continuously circulated to the radiators by means of a small electric pump—a basic operating feature which puts the heating medium under constant control. Pictured above is the Hoffman Control, the "mechanical brain" which regulates the temperature of the circulating water. An outside control, in conjunction with a bulb in the hot water line, *automatically* selects the water temperature necessary to keep the house at any predetermined degree. With delicate precision, it smoothly *varies the water temperature* according to the minute-by-minute need for heat. So precisely that over and under-heating is completely eliminated!

With this system of continuous circulation, smaller radiators can be used. Smaller radiators are more easily concealed and the saving in radiation will, in many cases, pay the entire cost of the controls.

This system of balanced, uniform heat is not confined to residential applications. It has an astonishing record of success in apartments, factories and commercial buildings . . . *yet does not call for a premium price!* Any hot water boiler, if fired with oil, gas or a stoker, can be equipped with Hoffman Controls.

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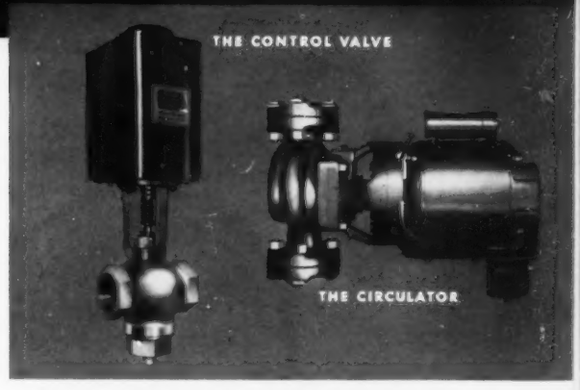
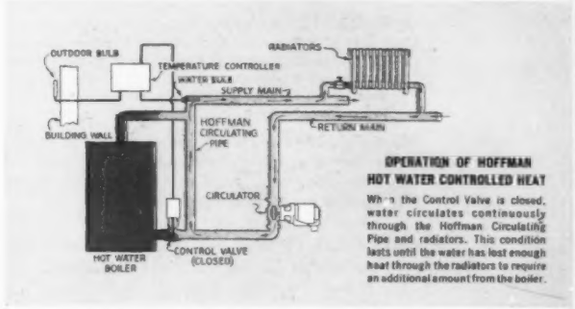
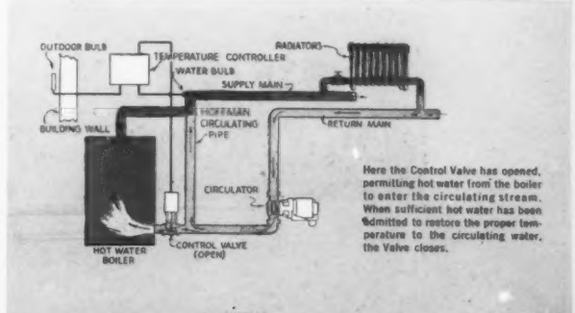




OPERATION OF HOFFMAN HOT WATER CONTROLLED HEAT

When the Control Valve is closed, water circulates continuously through the Hoffman Circulating Pipe and radiators. This condition lasts until the water has lost enough heat through the radiators to require an additional amount from the boiler.



Here the Control Valve has opened, permitting hot water from the boiler to enter the circulating stream. When sufficient hot water has been admitted to restore the proper temperature to the circulating water, the Valve closes.

HAZAKROME - 12 - SN - 600
PERFORMITE - 12 - RHT - 600V - HE
PERFORMITE - 12 - RH - 600V - HE
PERFORMANCE - 12 - RP - 600
WATERTITE - 12 - RW - 600V
HAZACODE - 12 - R - 600V

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★ **HAZARD PERFORMITE, Type RH.** An unusually heat-resisting, super aging rubber insulation for buildings where an especially high grade of wire is desired. Meets the requirements of federal specifications JC-106 and ASTM D-469. May be operated at a conductor temperature of 75° C. (167° F.)

★ **HAZARD THIN WALL PERFORMITE, Type RHT,** small diameter wire is the only type that may be used for both new work and rewiring. Available in sizes 14 to 8 inclusive and in full range of colors.

★ **HAZARD WATERTITE, Type RW**—exceptionally tough and elastic. Very high dielectric strength and resistance; low specific inductive capacity maintained on long immersion. Approved for use in moist places in buildings instead of lead covered type.

★ **HAZAKROME, Type SN,** the smallest diameter building wire, permits high increase in electrical capacity by rewiring existing raceways. It has a synthetic flameproof insulation with no braid. Only type available in sizes from 14 to 4/0 for rewiring, comes in a full range of colors.

We are glad to answer any questions you may have concerning the right type of wire to best meet certain conditions or to send you booklets giving full information on Hazard Wires. Just write us,

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HAZARD
BUILDING WIRES

WITH RECORD READERS

(Continued from page 12)

has been awarded to *Rockwell K. DuMoulin*, AIA, of Providence, R. I., for continued research in rammed earth construction. Dean *Leopold Arnaud* has announced. Carrying a stipend of $1,800, the Fellowship will enable Mr. DuMoulin to tour the United States investigating modern adaptations of the ancient method of building houses and barns with packed soil, which "requires no skilled labor and little equipment," according to Dean Arnaud.

THE most beautiful bridges built of steel during the past year were cited by the American Institute of Steel Construction, New York, at a dinner May 22 at which the Thirteenth Annual Awards were announced:

Most beautiful monumental bridge: Susquehanna River Bridge between Havre de Grace and Perryville, Md.; engineers, J. E. Greiner Company.

Most beautiful medium-sized bridge: Dunnings Creek Bridge on the Pennsylvania Turnpike in Bedford Township, Pa.; engineers, Parsons, Klapp, Brinckerhoff & Douglas.

Most beautiful small bridge: Klamath River Bridge at Orleans, Calif.; engineers, C. H. Purcell, State Highway Engineer, F. W. Panhorst, Bridge Engineer, Department of Public Works, State of California.

Summer Schools

FERNAND LEGER will teach courses in painting at the summer session of Mills College, California, from June 29 to August 8, Dr. *Rosalind Cassidy*, Director of the Summer Session, has announced. Leger was an initiator, with *Picasso*, *Derain* and *Matisse*, of the modern movement in France. For years, in his Paris art school, he instructed in the form, design and color of abstract painting. He gave courses at Yale University in 1922.

* * *

FOR the second year a collaborative summer session will be offered in Cambridge, Mass., by the Harvard Graduate School of Design and the Cambridge Graduate School of Smith College. Courses, to begin July 7, will include architectural and landscape design. The faculty includes: *Henry A. Frost*, Chairman, *Joseph Hudnut*, *Kenneth J. Conant*, *Josef Albers*, *Stephen F. Hamblin*, *Martin Wagner*, *J. Georges Peter*, *Walter L. Chambers*, *Hugh A. Stubbins, Jr.*, *Albert E. Simonson* and *Carol Fulkerson*.

Landscape Architects Needed

A CALL for landscape architects, needed in connection with national defense housing and other projects, now comes from the U. S. Civil Service Commission. An examination is announced to fill such positions, which pay $2,000 to $5,600 a year. Applications must be filed not later than June 26 with the Commission's Washington office, where complete information regarding requirements for the examination may be obtained.

Died

CHARLES DELEVAN WETMORE, 74, of New York. Mr. Wetmore was a member of the firm of Warren & Wetmore, which he and the late *Whitney Warren*, designer of the Louvain Library in Belgium, founded in 1898. Among the buildings in New York designed by the firm were the Grand Central Terminal, the Ritz, Commodore, Vanderbilt and Biltmore Hotels.

* * *

ARTHUR C. JACKSON, 75, of New York. Mr. Jackson designed a number of large New York banks and office buildings. He was with Carere and Hastings at the time that firm designed the New York Public Library. More recently he had confined his work to large residences in New York, New Jersey and Connecticut. His practice is being continued by his associates, *Russell S. Johnston* and *Andrew Palmieri*.

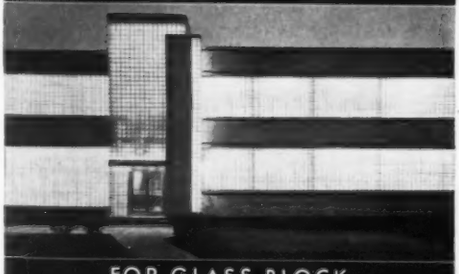
* * *

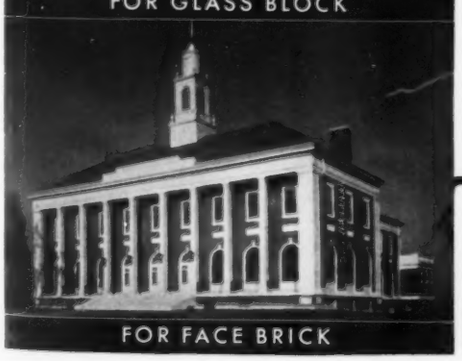
HAROLD W. DOTY, 45, of Portland, Ore. Mr. Doty was a leading residence architect in his state, and a past president of the Oregon Chapter of AIA.

(Continued on page 118)

STYMIED

FOR STONE


FOR GLASS BLOCK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This mortar cement contains no soluble alkalies to produce disfiguring stains when it is used. Having Medusa Waterproofing ground in mechanically during manufacture, it makes a waterproof mortar joint. Every pore of the mortar is lined with this waterproof material, repelling all water. There can be no staining or efflorescence caused by alkali-laden water leaching through the joint, evaporating and leaving the alkalies on the surface.

StoneseT has the least volume change of any white mortar cement. This eliminates shrinkage and assures a permanent bond. StoneseT is delivered on the job ready to use, requires no admixtures and is economical. Send the coupon below for detailed information on StoneseT.

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NEWS FROM WASHINGTON

NEW FEDERAL FUNDS FOR CONSTRUCTION INDUSTRY

New defense housing funds. . . . Prefab gets going. . . . Building material shortages. . . . Standardization. . . . Plant construction **—By KENDALL K. HOYT**

AFTER A COMPARATIVE LULL for several weeks in the letting of Federal contracts, the time is close at hand when new Federal money will begin to go into the construction industry in fast increasing volume. Operations under the new Lanham Bill authorization and the Army cantonment program are moving forward on top of the going programs. Defense plant construction is opening up on a wider scale as estimates of production needs are steadily pushed upward. Lend-lease activities are in motion though official secrecy is clamping down on many phases of the program. New public works funds are in prospect.

Washington factors are still highly favorable to civilian as well as defense construction. Looking ahead, some observers here doubt that the "business as usual" sign can continue to hang out in the housing field when the defense production is built up to its full proportions. The policy may ultimately have to turn to deliberate discouragement of all non-defense activities, beyond the few such as aluminum and autos which are already facing curtailments for civilian use. But it is scarcely to be expected that housing will face heavy obstacles for at least several more months.

Looking short range, the abandoning of "business as usual" should stimulate the practice of industrial architects. Since production is needed *now*, it is felt by many officials that industry must proceed with new facilities and not hang back as heretofore through fear of the post-war consequences of overbuilding. There are indications of much sub-surface tension in OPM on this very question. The NOW school of thought undoubtedly will prevail.

On the price front, OPACS is successful in holding building materials in line but cannot or will not hold back increases in wages and farm commodities. Financial authorities, in consequence, are frankly afraid of an inflationary movement affecting all commodities and possibly in more than formative stages.

Defense housing funds

Passage of the Lanham Bill to authorize another $150 million for defense housing is enabling the Federal Works Agency to push forward with allocations for defense areas in many regions where the work has been set up anticipating the appropriation.

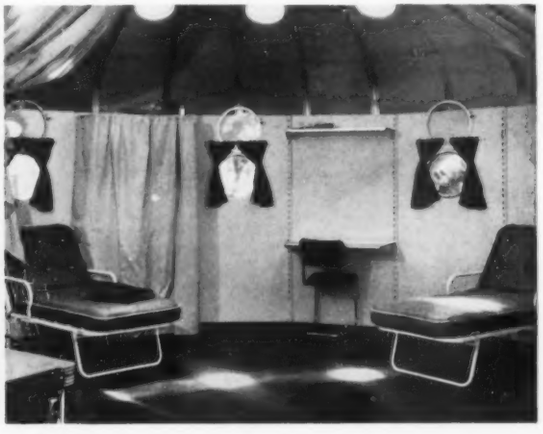
Hearings are under way on the other Lanham Bill to provide $150 million for public works in defense areas—streets, sewers, schools, and the like. In some quarters it is urged that this sum be upped to $500 million. This program is very promising in terms of architectural practice.

Meanwhile, a deficiency item of $15 million, on top of $5 million previously granted, has gone through for the most urgent defense housing. It is estimated that some 14,000 portable units and trailers, 7,000 dormitory units, and 300 ship units will be needed. Under the program thus far, trailer costs have been high, running about $1,100 per unit while dormitories have averaged $375.

Work for architects

Although the PBA phases of the defense housing program have afforded little work to private architects, it is significant that the new Lanham Bill money is being held pretty much by the office of Federal Works Administrator *Carmody* who is assembling his own housing staff. To some extent, he is by-passing his subordinate units, the PBA and USHA. In

(Continued on page 18)



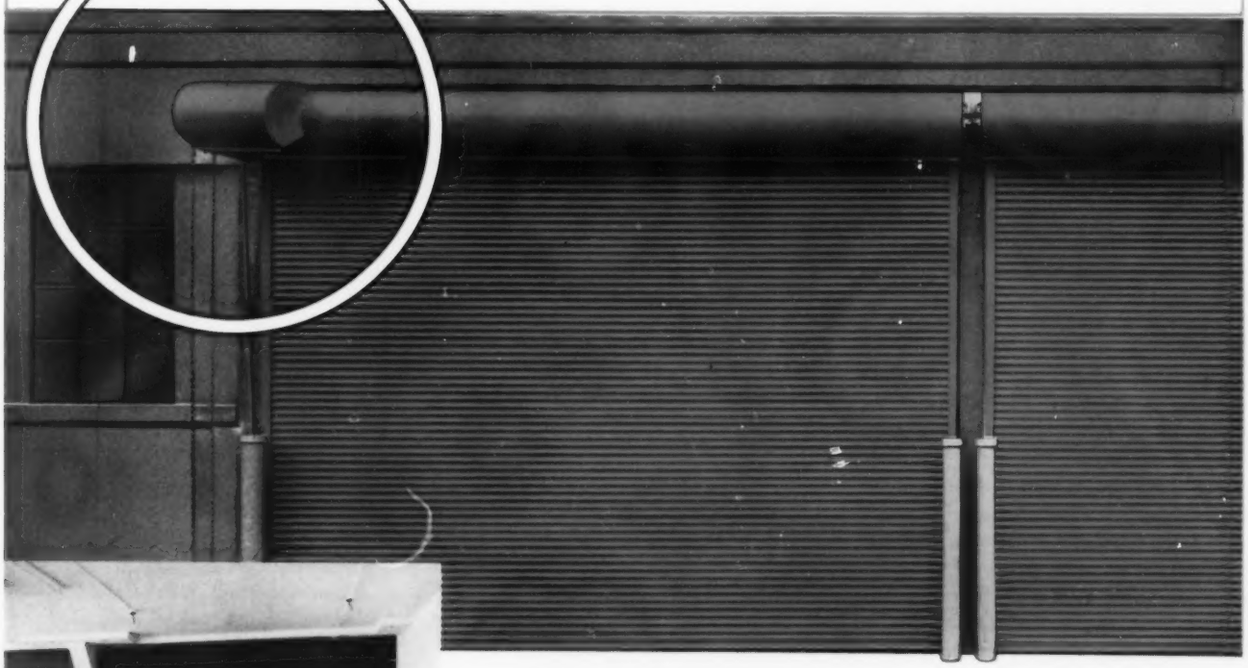
Photos from Washington Post

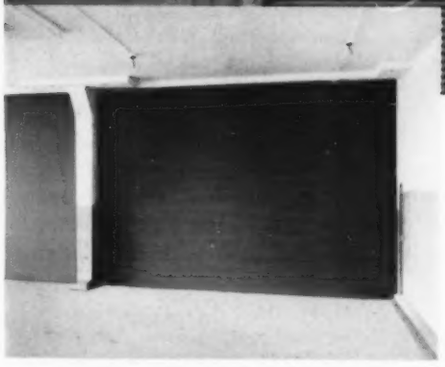
Emergency dwelling unit designed by Buckminster Fuller. The "house" is made of corrugated sheet iron and is fitted inside with insulation and wallboard. The floor is surfaced with linoleum and partitions are created by movable canvas curtains

featuring

THE MAHON WEATHERPROOF HOOD FOR EXTERIOR POWER OPERATORS

Rolling Steel DOORS





STREAMLINED APPEARANCE WEATHERTIGHT PROTECTION

yet easily accessible

Where interior headroom and sideroom is limited, the Power Operator of a Mahon Rolling Steel Door may be located on the outside face of the building. To prevent penetration of rain, wind, snow and dust to the power operating mechanism Mahon engineers have developed a new, streamlined protective hood to enclose it. The curved front section is removable for direct access to the motor and gears.

Compact and inconspicuous, its sheet steel construction conforms to the contour of the steel cylinder into which the door rolls. This smart-appearing, serviceable innovation is the latest contribution of Mahon engineers toward better rolling steel door construction—one of many advancements that give Mahon Rolling Steel Doors the preference wherever modern building methods are practiced.

Door Opening Is Unobstructed

When there is insufficient room on inside walls or ceiling, locating the Power Operator on the exterior leaves the door opening free of all obstructions. Power control of the door remains inside, insuring safety from intrusion.

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Manufacturers of Rolling Steel Doors and Grilles, Kalamein and Tin Clad Doors, Steel Roof Deck and Cast Iron Roof Sumps.

MAHON

NEWS FROM WASHINGTON

(Continued from page 16)

some cases, he has offered money directly to local housing units without going through USHA.

Since FWA does not intend to assemble a topheavy staff in Washington, there is promise of opportunities for local architects, especially through the local housing authorities. Site planning work is likely to be available even when the designs for the houses are prepared in Washington.

Officials stress the need for experience in low-cost housing projects, applicable to the defense housing problem. Architects who lack such experience may well consider teaming up with colleagues who have worked with local housing authorities and have on their records a few jobs in this field.

Prefab

Prefabrication, especially where demountability is wanted, will be used on a much larger scale than heretofore under the new Lanham Act program. Under the old PBA phases of defense housing, prefab has been confined to the few projects discussed in our previous reports. Among these, the Indianhead, Md., job is held up by a serious jurisdictional strike.

With all prefab work centralized under the office of Federal Works Administrator Carmody, several thousand units are already definitely contemplated and it is likely that this type of construction will play a much more important role than heretofore.

One new scheme being demonstrated in Washington is for grain bin manufacturers to stamp out one-room units. In their present form, they are round, turtle-back affairs. But they are more commodious than trailers, which are subject to highway restrictions as to size. They can be produced rapidly and in volume. *Buckminster Fuller* is the designer.

U. S. Housing Authority

USHA, with 50 Lanham Act projects totaling 14,000 dwelling units, in addition to the 20 defense projects under its old program, has been going into construction at the rate of 1,000 units per week. The Authority has not been troubled with strikes. Agreements made between the labor unions locally have prevented jurisdictional troubles. It has even been possible to work two or three shifts, on speed-up jobs, without payment of overtime on the later shifts.

The Authority is getting an increasing number of bidders on new projects. The average runs about eight per project now as against seven last year and six the year before. USHA spreads defense work among contractors of moderate size.

FHA

The bill to extend FHA Title I provisions for home modernization another three years to July 1, 1944, has passed the House and is up for early action in the Senate. This measure increases the overall limit on mortgage insurance under Title II from $4 billion to $5 billion and otherwise extends or broadens the Administrator's powers in several particulars.

Building material shortages

A blackout is at hand for a few familiar construction materials which must be deleted from architects' specifications for the duration. Shortages, priorities and price jumps have not affected the heavy construction items—cement, brick, lumber, and the like—in any marked degree. Probably no trouble in these materials for a few months yet.

But in the non-ferrous metals, where the demand for defense production has rapidly expanded beyond the original estimates, civilian builders must change to substitute materials. Opinion here is that the zinc situation is about to shut off the supply of galvanized metals for such uses as downspouts and corrugated roofing. Composition, slate, or shingle roofs are indicated. Copper will be available in limited quantity still for downspouts, gutters and flashing.

The lumber situation remains satisfactory to price officials with an exception or two. In view of redwood price advances, Washington observers think that a shift to other woods for siding is in order. Plywood is still a problem—expensive and hard to get. For form work, experts believe it is now cheaper to use ordinary lumber with fibre board lining, despite the added labor costs entailed.

Steel is still available for the average job but is sometimes hard to get in large quantities.

War brings standardization

Simplification, standardization and reduction in the number of colors, sizes and styles are given impetus by the emergency, to reduce the work involved in production for civilian uses. Several proposals have been formulated as to plumbing and roofing materials.

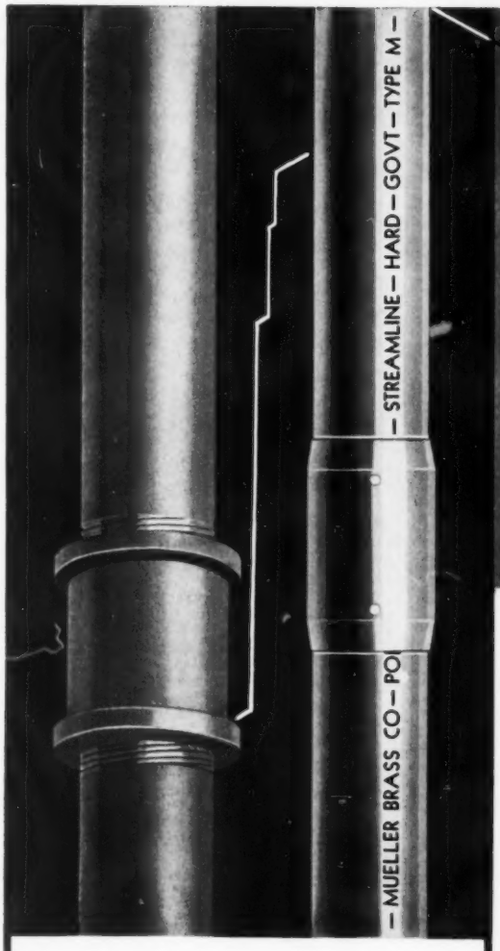
A new division to deal with lumber, building materials and furniture has been set up within *Leon Henderson's* Office of Price Administration and Civilian Supply under the direction of *Peter A. Stone*.

Plant construction

The magnitude of the defense plant construction effort is indicated by recent OPM figures. As of March 30, the Government was committed to spend $1,915 million; private industry was committed for $877 million under Certificates of Necessity; and the British for $191 million. In all, more than three billion dollars.

A delay has occurred in plant expansion under Certificates of Non-Reimbursement, issued for defense construction where the companies are to spend their own money without repayment by the Government but are entitled to a tax deduction which is fixed in advance by the certificates. On the theory that some companies are receiving on their government performance contracts more than the usual allowance for plant wear and tear, it is argued in some official quarters that they are being paid for their plant costs and therefore are not entitled to certificates under the

(Continued on page 20)



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COPPER PIPE AND FITTINGS

A system of copper will outlast the building ★ ★ ★

● Copper has long been recognized as the most durable of metals for piping purposes. There are authentic cases on record where it has lasted for hundreds of years and, with the exception of a slight tarnish, just as serviceable as when first installed.

Athough copper is not a cure-all for all water conditions—and there are certain sections in the country where its use is not recommended—it does fill the requirements for an all-purpose piping in the great majority of cases, and in most instances is a far superior piping to install.

An efficient—and lastingly efficient plumbing or heating piping system is one of the most vitally important factors in any home, or in any building where a conducting system is required. It is the actual nerve center upon which the very livability of the dwelling depends—and this becomes more and more apparent after some years of service.

STREAMLINE Copper Pipe connected with STREAMLINE Fittings assures a piping installation that incorporates tremendous resistance to rust, clogging and vibration. More than that, its cost is little, if any higher than materials that corrode and leak after a few years of service.

STREAMLINE Copper Pipe conducts hot water quicker with less heat loss than ferrous piping. It requires less room to install, has no threaded joints to leak and is the best possible insurance against plumbing repair bills. Like all good things, STREAMLINE has many imitations but no equals. Specify genuine STREAMLINE. Insist upon its being used.

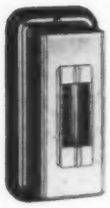
● Note the great difference in appearance between the two sections of pipe illustrated above.The STREAMLINE Copper Pipe (right-hand illustration) is much neater and compact in appearance. It actually appears smaller in diameter but the STREAMLINE Copper Pipe has as great, or greater internal flow capacity than the threaded pipe.

Piping systems connected by threaded fittings are weakest at the joint because the metal is cut away to fabricate the thread. This is a potential point for future breakage and leaks.

In contrast to this copper pipe connected with STREAMLINE Fittings is actually strongest at the joint and is so constructed that its internal diameter is uniform and smooth—much less chance for clogging and pressure loss.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

THE COST OF JOHNSON CONTROL IS RECOVERED BY REDUCED OPERATING EXPENSE



That's why modern Johnson automatic temperature control systems cost less, over a period of a very few years, than out-of-date operation with defective temperature regulation equipment or no control at all. Johnson precision-controlled heat provides healthful comfort, money-saving convenience, and maximum fuel economy. Regardless of the type of heating and ventilating system, Johnson control is the automatic "brain", keenly alert to the daily 24-hour task of maintaining correct temperature and humidities . . .

In schools where certain rooms or sections are used at different hours than the balance of the building, Johnson *"Dual"* control is particularly effective. A normal temperature may be maintained in occupied rooms, while unused spaces are kept at a lower economy level, without separate steam mains! No matter whether the building is new or old and despite the fact that it may be equipped with some type of heat regulation, investigate *Johnson control.* now! Mail a post card today!

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Automatic TEMPERATURE AND AIR CONDITIONING *Control*
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NEWS FROM WASHINGTON

(Continued from page 18)

Second Revenue Act of 1940.

This legal hitch has held back a large volume of construction, since the manufacturers are reluctant to make commitments till they know where they stand.

WPA continuance

The question of continuing work relief under the Works Progress Administration came up for hearings late last month, after some delay, in the House Appropriations Committee. WPA is fighting hard to retain its function as long as large numbers of near-unemployables are without private employment. It is argued that nearly 70 per cent of the primary defense contracts are in 20 industrial areas which contain only a quarter of the population and a quarter of the relief load, so that the greater part of the country has yet to feel the direct economic stimulus of the program.

Issues of WPA competition with private contractors, architects, and engineers still arise, however. In Idaho, WPA has offered to take over the job of planning within the state, heretofore performed by state and private experts.

Best guess is that WPA will get the reduced sum of $875 million asked by the President, possibly with further restrictions on its timing and use. But some members of Congress want to cut to $500 million. WPA rolls are scaling off from 1,600,000 to a summer complement of 1,300,000. The President has requested that some 20,000 WPA employes be blanketed into Civil Service.

Airports

Farthest behind of the defense programs, the national airport plan of the Civil Aeronautics Administration is being given an additional $60 million for 149 more landing fields, certified as needed for defense, in addition to the 250-airport program under way.

WPA is still carrying on a large-scale airport program. Community interest in airports is keen and further steps may be taken later in the session after the regular appropriation bills are through.

YOU NAIL TO STRAN-STEEL

Used on building projects of all sizes and types, Stran-Steel framing means reduced costs and increased building speed. On the small houses and big apartment jobs being built for the U. S. Navy, the Ford Foundation at Dearborn, Michigan, and many large oil corporations operating in South America, Stran-Steel has been specified because it provides the ideal answer to the requirement for construction in the LEAST amount of time! That's why it's used by leading builders.

Complete Stran-Steel frames are used in these low-cost, five-room houses. Sixteen men erect a single frame in one hour.

Modern apartment project built with Stran-Steel. Stran-Steel joists and studs are erected 24 inches on center. They are attached to top and bottom plates by self-threading screws.

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Stran-Steel is lightweight structural steel framing designed for use in small, standard-design homes, apartment projects and light commercial buildings. The exclusive STRAN-STEEL NAILING GROOVE—a patented feature—permits the rapid attachment of collateral materials, such as metal lath, wallboard and roofing, directly to the steel members with ordinary hammer-and-nails methods! Carpenters erect Stran-Steel easily and quickly without previous experience. Stran-Steel studs, joists and roof rafters are cut to exact lengths at the factory, shipped to the job ready for immediate use, and assembled with self-threading screws. Stran-Steel framing insures rigid, fire-safe and permanent construction. Plaster cracks are eliminated, door frames don't warp, and floors won't squeak when a building is framed with Stran-Steel!

GET THE FACTS! This new manual tells the complete story of HOW TO BUILD WITH STRAN-STEEL. Write for it today. Address your inquiry to Stran-Steel Division of Great Lakes Steel Corporation, 607 Shelby Street, Detroit, Michigan.

UNIT OF NATIONAL STEEL CORPORATION

STRAN STEEL

NEW YORK ADOPTS SLUM CLEARANCE MEASURE

Urban Redevelopment Corporations Law widens field for private work

LEGISLATION aimed to permit slum clearance and redevelopment by privately financed organizations has long been the goal of many civic organizations. This goal has been reached first in New York State where the Urban Redevelopment Corporations Bill became a law May first, when it was approved by Governor *Herbert H. Lehman*. The new statute marks the culmination of a two-year campaign of the Slum Redevelopment Committee of The Merchants' Association of New York City, chairmaned by *Thomas S. Holden*, to enact a model slum clearance law.

The original bill submitted last year was vetoed by the Governor (see AR 5/40 p. 86-87). Redrafted by Breed, Abbott & Morgan, corporation lawyers, and introduced in the 1941 New York legislature by Assemblyman *MacNeal Mitchell* and Senator *Thomas C. Desmond*, the present law is patterned after last year's bill in all its broad purposes and makes possible, through the agency of private capital and initiative, the clearance and rehabilitation of city areas found by the City Planning Commission to be substandard.

A public purpose

According to *George H. McCaffrey*, Director of Research for The Merchants' Association and intimately concerned with details of the legislation from its inception, "The new law states that the clearance and rehabilitation of substandard and unsanitary areas is a public purpose. It authorizes the creation of urban redevelopment corporations for the accomplishment of that public purpose. Such corporations are given the power to select sites of at least 100,000 square feet in areas previously declared substandard and unsanitary by the local city planning commission.

"The corporation may prepare plans for the redevelopment of such an area and submit the physical aspects to the city planning commission and the financial aspects to a supervising agency, which in New York City would be the Board of Estimate, for approval. In order to permit large scale operations, a redevelopment corporation is given the right to obtain property by eminent domain upon proof that it already controls 51 per cent of the redevelopment area, both by assessed valuation and area.

City to fix assessed value

"As the city contribution toward the transformation of a bankrupt area into a 'going concern' the law permits the city to fix the assessed value of land and buildings at the time of acquisition.

"In return, the corporation agrees that it will not pay out as interest and dividends more than five per cent of its development cost annually during the tax limitation period. No method of capitalization is prescribed, but the development cost is carefully defined so as to include only legitimate and actual expenditures for the redevelopment.

"Changes in the development plan can be made only with the approval of the city authorities. Since the measure is primarily a slum clearance law rather than a low rent housing project, there are no limitations. After the expiration of the tax limitation period there is no limit upon the dividends which may be paid out, but there are requirements for the building up of adequate reserves so that the development will be kept upon an investment rather than a speculative basis."

Inducement to capital

One important inducement to private capital offered by the bill is the remission of taxes for a period up to a maximum of 10 years on the value credited by the assembly and improvement of the real estate. However, this tax exemption feature is optional with a particular city and requires some local enabling law or ordinance to make it effective.

Opposed in some states

Regarding this provision of the new law Mr. Holden says,

"People in some other states contemplating similar legislation have opposed this on the ground that tax exemption has been generally abused. In my opinion one has to regard the city as a preferred creditor of bankrupt enterprises in this particular instance. The city has an interest—as any intelligent creditor would have—in allowing reorganizations and mergers so that a debtor enterprise can establish a good earning basis; and the tax exemption feature was considered an essential part of the bill by people experienced in large-scale building operations in New York.

"In addition to the tax exemption provision the bill offers a further inducement to new construction financing. Institutions such as state-regulated insurance companies and savings banks which hold mortgages on property within a proposed rehabilitation area may exchange their mortgages for debentures or common stock of a redevelopment corporation. This means, of course, that existing mortgages can be subordinated in order to facilitate required financing."

Flexibility of law

Speaking generally about results of this legislation which may be anticipated, Mr. McCaffrey says, "The law is sufficiently flexible to permit the redevelopment of any area larger

(Continued on page 120)

NEW TECHNIQUE OF DAYLIGHT TRANSMISSION

Twin photographs show why INSULUX Prismatic Block provi[des] more usable light, evenly distributed

PHOTOGRAPHIC DATA: All photos made with same camera on one film roll with sunlight brilliant. Exposures: Both pictures facing opening, 1/50 second, stop f.9. Both pictures facing rear wall, 1/50th second, stop f.5.6. All prints given same exposure in printer. No retouching.

THESE photographs tell better than words that INSULUX Prismatic Block offer architects a new technique of using natural light—economical *re-direction and distribution* of daylight for even lighting, without glare.

All photographs were made in pairs 1 minute apart, at 1 p.m., April 9, 1941, at latitude of 40° north. Wall opening 5.5 per cent of floor area.

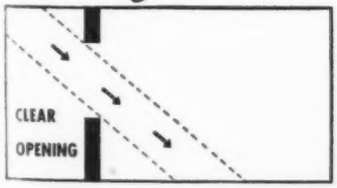
The comparison is striking — INSULUX Prismatic Block vs. a free, unglazed opening, which obviously admits maximum available light. Yet note the better lighting on rear and side walls when INSULUX panel is put in opening.

The principle is simple: Refraction of natural light upwards to a reflective ceiling, plus diffusion for even distribution. No system of louvers, reflectors or baffles are as all-around efficient and as permanently economical as INSULUX Prismatic Block.

Panels of No. 351 Prismatic Block above eye level, with No. 350 No-Glare Block below eye level, can be used on any exposure without glare.

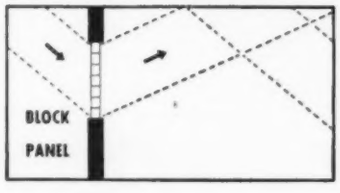
INSULUX Prismatic Block logically solve the problem of ample, usable daylight in industrial plants, offices, or any large interior. Owens-Illinois Glass Company, Insulux Division, Toledo.

OWENS-ILLINOIS
INSULUX
Glass Block

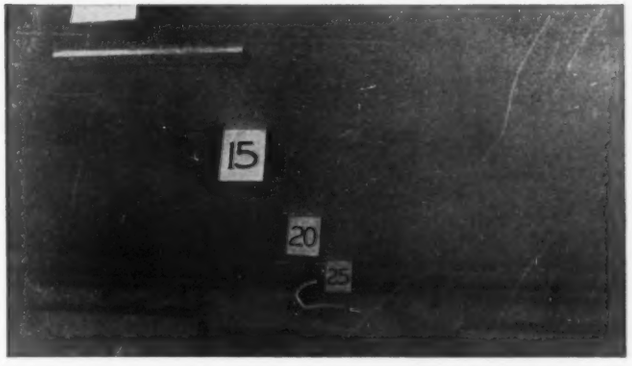


Drawing at left shows path of direct light through free opening —downward to floors, which absorb up to 85%. Direct sunlight would make shading necessary to avoid glare near opening, comparative darkness in other areas.

Drawing at right shows path of direct light through INSULUX Prismatic Block — upwards to ceiling, which reflects up to 85%. Diffusion spreads light horizontally. No-Glare Block would be used in panel below eye level.



Sole opening in 23 x 25 room is free, without glass. Little light on ceiling or nearby wall.



View towards rear wall with opening free. Note lack of wall detail, poor light on last card.

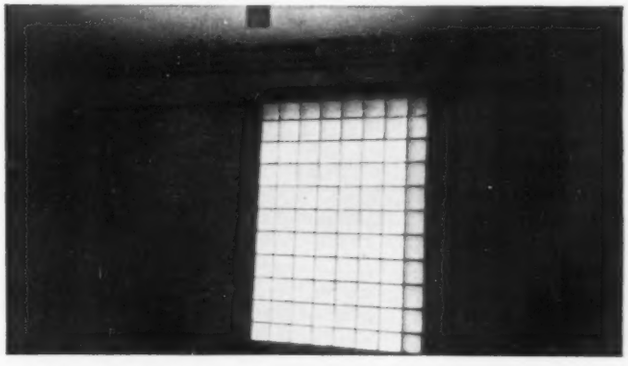


Photo taken 1 minute after top picture, with INSULUX Prismatic panel in place. Note man at right, present but not visible in top photo. Faintly visible, right, is extra test panel hung on wall.

Photo taken 1 minute after twin photo above. Compare detail on rear wall, lighting of cards. Note also uniform lighting on the ceiling from first to last card.

Master Painters talk about Wood Finishing with

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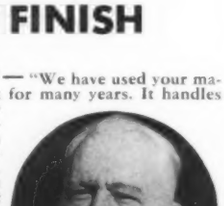
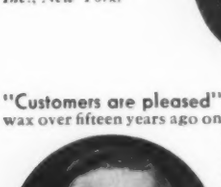
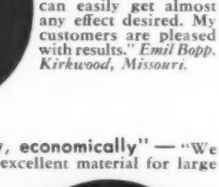
"A fine wax finish" — "We have used your material on private work for many years. It handles easily, runs true to color and uniform in character and permits us to produce a fine wax finish very economically. We are using Minwax on 3 U.S.H.A. Housing Projects." *M. J. Gunn, Gunn Decorating Co., Inc., New York.*



"Customers are pleased" — "I first used Minwax over fifteen years ago on an architect's specification... I have since used it on all kinds of wood finish jobs, floors, interior woodwork, furniture and exterior doors. Your colors are good and run uniform and I can easily get almost any effect desired. My customers are pleased with results." *Emil Bopp, Kirkwood, Missouri.*



"Fine results quickly, economically" — "We believe Minwax is an excellent material for large scope housing, both from the painter's and the owner's standpoint, for it permits the painting contractor to produce a fine result, quickly, effectively and economically and will permit the owner to keep the surfaces in first-class condition at all times with little effort." *Geo. A. Arend, Ohio Spray Painting Co., Cleveland, Ohio.*



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ON WOODWORK—Develops the natural charm and beauty of the wood.

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TRENDS IN BRIEF

FLEXIBLE CONSTRUCTION TO LESSEN BOMB DAMAGE

Light-weight "suspension-bridge" design suggested as means of minimizing explosion effects in long span industrial structures

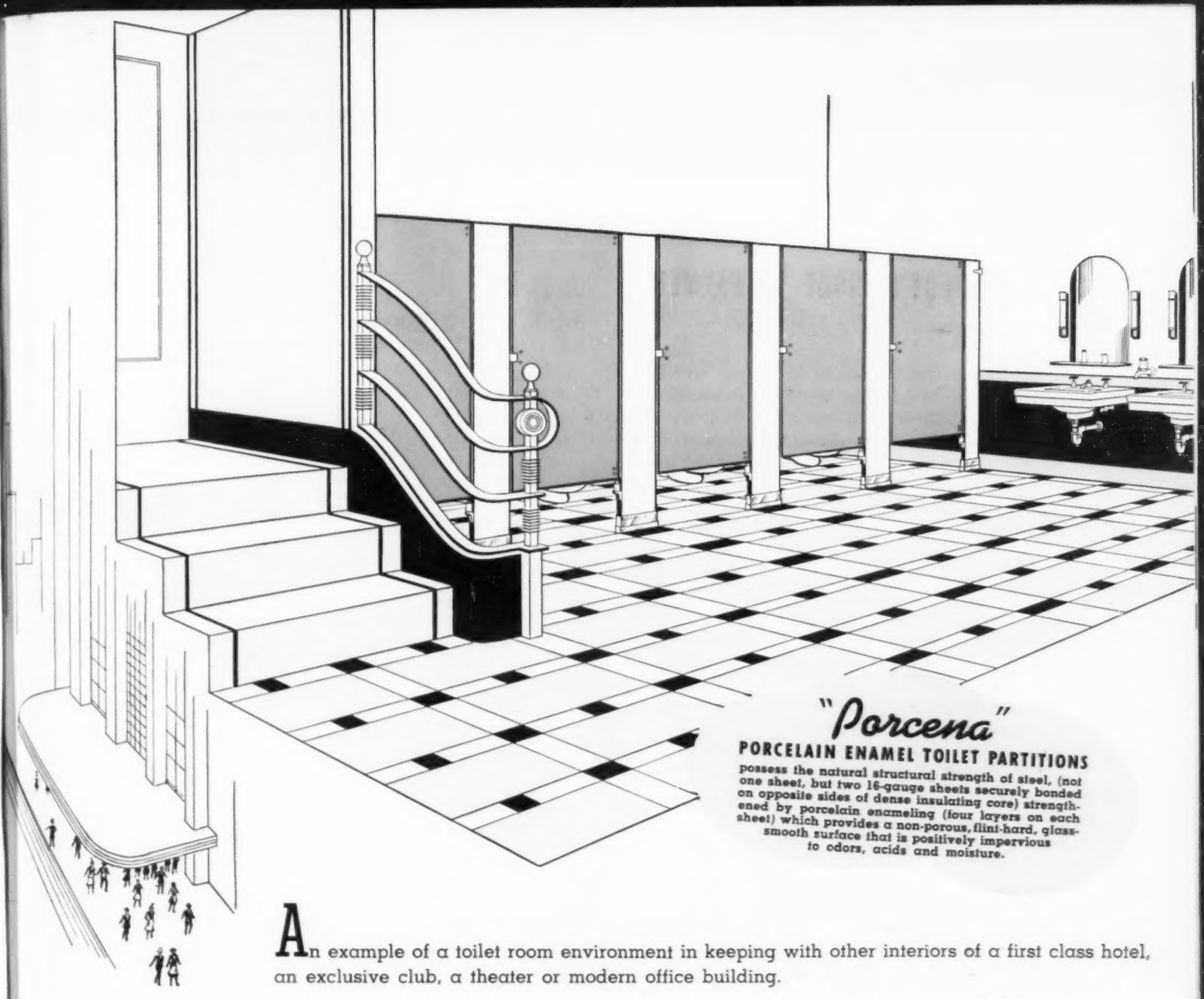
RESULTS OF "total" war technique have proved the virtual impossibility of devising construction that will be completely immune to damage through bombing. Thus, as "total defense" projects advance in this country, architects and engineers are becoming increasingly intent upon developing constructions which may minimize damage from bomb attacks.

Among the most recent of such designs is the proposal of *Richard Irvin*, Pittsburgh architect-engineer, who suggests abandonment of great weight and rigidity as principles of building design. In its place Mr. Irvin would employ opposite principles—light weight and flexibility. To illustrate his theory he has designed the airplane hangar shown in the sketches, in which are utilized structural elements that, in combination, embody the tension-compression principle of a suspension bridge.

Mr. Irvin—who has applied for a patent on his construction—calls this new type of building "bomb-resistant," meaning that in event of a bomb hit, damage to the building contents and to the structure itself would be minimized because of the light weight and flexible character of the construction. As shown, the entire structure is of steel with a clear span of over 300 ft.—an area suitable among other uses for airplane manufacture. In place of usual framing the design employs a series of spring-equipped hinged bents supporting wire ropes which assume a catenary curve and form a base for a one and one-half inch covering of light-weight roofing that includes insulation and built-up surfacing.

Side walls are enclosed with metal siding—though other light-weight materials could be used—and daylighting without dangerous reflections is achieved through angular installation of windows.

(More "Trends in Brief" begin on page 32)



"Porcena"

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Sanymetal "Porcena" Toilet Compartments are fabricated of the ageless and fadeless material, —porcelain enamel. Porcelain enamel is a glass-hard, stainless material that always looks new, does not absorb odors, is moisture-proof and rust-proof, and resists the corroding nature of ordinary acids. The glistening porcelain enamel finish can be wiped clean as easily as any glass-smooth surface, thereby insuring a high standard of sanitation.

Sanymetal Normandie Type Toilet Compartments, illustrated, as well as each of the other four types of Sanymetal Toilet Compartments, embody the results of 25 years of experience in making over 50,000 toilet compartment installations. Ask the Sanymetal representative in your city to help you plan suitable toilet room environments for any type of building.

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Sanymetal TOILET AND OFFICE PARTITIONS

THE ARCHITECT'S RIGHT TO PAYMENT . . . Part II

By NATHAN YOUNG

LAST MONTH we discussed the Architect's right to payment for services as affected by stipulations not to exceed a predetermined maximum cost and by conditions precedent, such as owner's satisfaction. Let us continue our discussion by a consideration of what is known to lawyers as anticipatory breach of contract.

Assume that an owner has commissioned an Architect to draw plans and specifications for a building; and that after the Architect has partly performed, the owner decides to abandon the project, and directs the Architect to discontinue work. What, now, are the rights of the parties? May the owner at his sole option terminate the contract? May the Architect, insisting upon total performance by the owner, complete his work, and sue for the full amount of the contract?

The owner by discontinuing work breaches his contract with the Architect and must respond to him in damages. The Architect, however, must minimize the damages by immediately stopping work. But, for the owner's breach of contract, the Architect may recover from the owner the reasonable value of the work actually performed plus the profit which he would have made had he been permitted to complete. For work performed after the owner's notice to stop, the Architect may recover nothing.

Promptness a duty

Among the Architect's duties is that of promptness in delivery of plans, specifications, and working drawings. In Edwards v. Hall, a Pennsylvania case, the court held that for delay in such deliveries the Architect is liable in damages which may be offset against payments due him.

"The owner," said the court, "could not very well hire another person to finish the work. He is practically in the power of the Architect and simply because the owner accepts and uses delayed plans and working drawings to complete a structure, this does not deprive him of his claim against the Architect, nor does he waive any right thereby. These failures are not to be excused because the owner does not complain."

Payment for extra work is another important consideration. If an Architect, at the request of his client, the owner, performs extra work such as revising plans and specifications, is payment for such extra work necessarily measured by the terms of the main contract?

Payment for extra work

In Sterling Engineering and Construction Co. v. Berg, a Wisconsin case, it appears that the Architect agreed to prepare plans and specifications for a three-story building. His compensation was one per cent of the cost. Later the owner requested him to revise the plans to provide for a four-story building. No agreement was made with reference to compensation for the extra work. The owner insisted that the Architect receive one per cent of the additional cost. The Architect claimed that a reasonable value of the extra work was two per cent for preparation of plans and specifications, and three per cent for superintendence.

The court held that "the contract compensation for the three-story building does not measure the compensation he should receive for the extra labor and that the (trial) court properly allowed him the reasonable value thereof as shown by the evidence.

From whom may the Architect seek compensation often raises an interesting problem. Liability for the preparation of plans and specifications must be based upon a contractual obligation. In other words it must be shown that the alleged obligor expressly or impliedly agreed to pay.

In Green v. Messing, a recent New York case, the plaintiff Architect sought payment for services rendered —not from the corporate owner of the premises which had engaged his services, but from an individual who indirectly benefited from the construction of a building on the vacant land.

Defendant must obligate himself

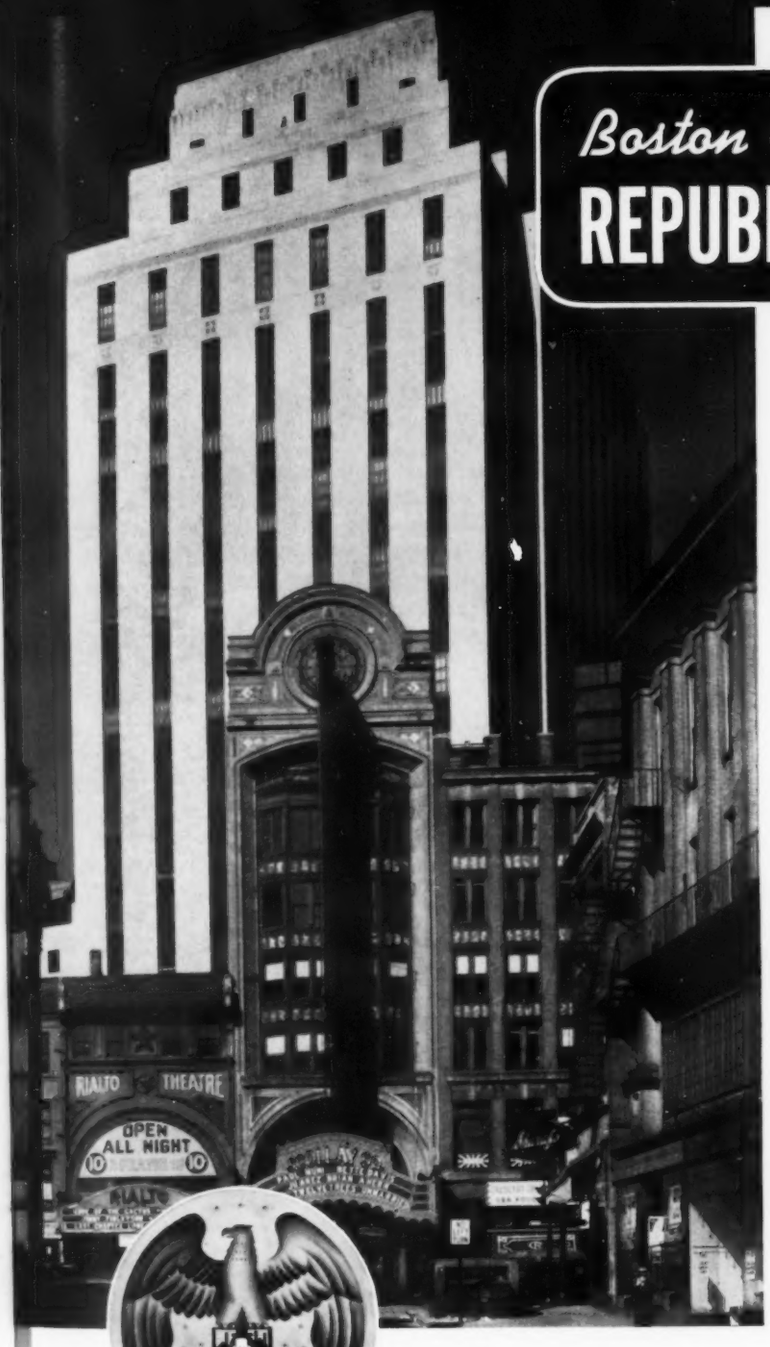
"While it is true," said the court, "that plaintiff's (Architect's) evidence tended to show that the defendant was to benefit by virtue of the services rendered by the plaintiffs, nevertheless they would not be entitled to recover without proof that the defendant personally obligated himself expressly or impliedly. Mere benefit from or even use of the plans would not suffice."

Reasonable value

In the absence of an express agreement fixing the Architect's fee, the latter must establish the reasonable value of his services in the event that he resorts to a law suit to collect. What factors enter into the determination of the reasonable value?

First and most important is the time spent by the Architect in the performance of his work. It is important therefore that the Architect maintain careful records of time consumed by himself and his assistants during the progress of the work.

Another important item is evidence as to what other Architects would charge for the same work in the same locality. In some jurisdictions standard charges for architectural work may be controlling. This is particularly true where the owner was aware of such standard charges when the work was originally undertaken.



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REVIEWS OF CURRENT LITERATURE

Compiled by ELISABETH COIT, AIA

FRANK LLOYD WRIGHT ON ARCHITECTURE: Selected Writings 1894-1940. Edited by Frederick Gutheim. New York, Duell, Sloan and Pearce, 1941. xviii, 271 pp., 8½ by 8½ in. $3.50

A WIDE WORLD of artists and profane alike greets any light on Frank Lloyd Wright; and this, the first of three books announced for publication this year, has been eagerly awaited, as are now the other two: A second edition of the Autobiography to include the last decade, and "In the Nature of Materials," a description and discussion of F. L. W.'s buildings by Henry Russell Hitchcock. Indeed a fourth ought soon to find a publisher if it has not already done so: a Harvard doctoral dissertation dealing in detail with Wright's work before 1910, by Grant Carpenter Manson.

The present work is one of a type appearing usually decades or even centuries after the death of the subject; and we are fortunate in its being available while Mr. Wright is still vigorous and active, and even capable of changing some of his opinions and expressing himself categorically and frankly—and rightly and even lloydly—for the temporarily definitive life and interpretation due about half a century hence. We shall be still more fortunate in having at hand this work in the late fall, by which time Professor Hitchcock's account of nearly 200 Wright commissions, completed or under construction, and the autobiography up to date will have better prepared both disciples and the laity for the present collection; and Mr. Gutheim has had that in mind in adopting the chronological order here followed. Organization of the material by this or that aspect of architectural thought and work would have simplified it for most readers.

Possibly the book is somewhat ahead of its time. It is a question whether notes for early lectures, sandwiched between frequent articles which repeat their ideas, will find attentive readers, or whether readers will read the memoranda by title and proceed to the next published article from catalogs and journals—including the ARCHITECTURAL RECORD, which published about one-fourth of the items in the list of "Published Writings."

THE ART OF COLOR AND DESIGN. By Maitland Graves. New York, McGraw-Hill, 1941. xvi, 292 pp., 7 by 10¾ in. Illustrated: tables, diagrams, color charts, etc. $3.50

A BOOK distinctive for the clearness and convincingness with which it analyzes essentials and principles of visual art.

Using illustrations ranging from classical Greece to modern advertising display photographs, it outlines ideals and criteria, avoiding the neo-"pathetic fallacy" but using freely and happily parallels from other arts, for example, music—graphic, "frozen," choreographic et al.—and interestingly complementing the running prose with footnotes, bibliographical, explanatory or parenthetic.

The work is an outgrowth of Mr. Graves' course in color and design at Pratt Institute and will perhaps be used mainly by students. But the layman will enjoy the crisp precision of the text and the definiteness of the diagrams and other illustrations as well as some of the exercises.

THE AMERICAN SCHOOL AND UNIVERSITY: A Yearbook. 13th edition. New York, American School Publishing Corporation. 625 pp., 8¼ by 11 in. Illustrated.

UNDER the editorship of Harold S. Buttenheim, editor of the *American City*, and with the advice of an editorial board of architects and educators, appears this revision of an established work, including over two score articles on design, construction, equipment, utilization, and maintenance of educational buildings and grounds. While the scope of the work is wide, there is emphasis on more modern aspects such as the community school, and on planning the secondary school plant for community use, as well as newer developments in equipment for physical education, laboratory, shop, cafeteria, and dormitory planning, classroom seating and so on. Lists of college, university and other educational officers and a classified index to manufacturers' products and services for educational buildings make this a useful book, although in the List of Architects for Educational Buildings there are omissions regrettable even in a list which does not claim to be comprehensive.

YOUR HOUSE AND MINE. By Geoffrey Boumphrey. New York, W. W. Norton, 1941. 253 pp., 5½ by 8¾ in., illus. $4.50

AGAINST a simple background on the early development of shelter, the author of several books on human institutions—roads, ships, houses—here makes an uncommonly good picture of the present and future of the house. Lucid, compact prose and nearly 200 photographs, often arranged in pairs to illustrate a point of contrast, carry the reader on from swamp and Iron Age camp to garden cities and tomorrow's necessarily wider town and country planning. To a sympathetic consideration of the successive shelter problems of a changing civilization piquancy is given by the judicial evaluation of how those problems have been solved.

American Figureheads and Their Carvers. By Pauline A. Pinckney. New York, W. W. Norton, 1940. 223 pp., 7½ by 10 in. Illustrated. $4.00

THIS BOOK, the first to present the art of the American shipcarver, spans about 150 years, from the record of a carving of 1720 in Kittery, Maine, to the decline of cutwater decoration in the latter part of the 19th century.

About 80 photographs show carvings both quaint and powerful, among them a charming figure attributed to Samuel McIntire. The book is further illustrated by drawings, a number of them from Navy drafts.

(Continued on page 30)

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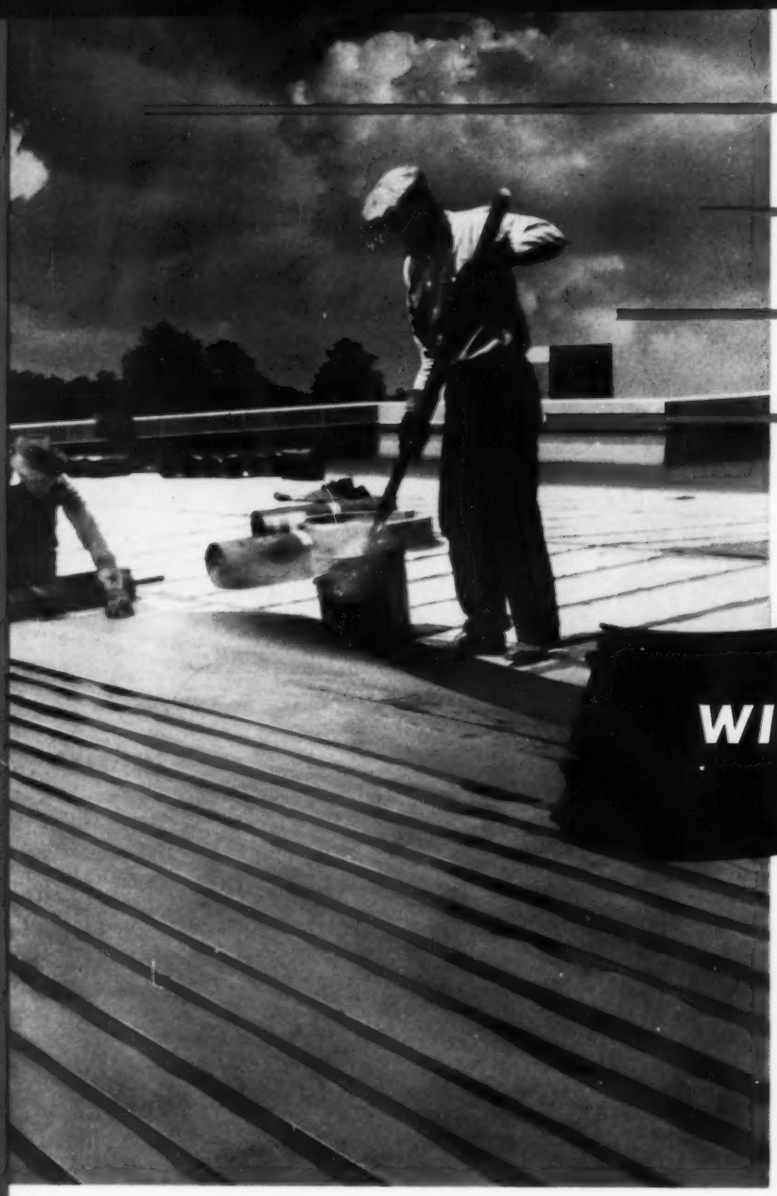

Some roofs going on now will last 20-30-40 years . . . and some won't

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- ☐ "Where to Use Pressure-Treated Timber"
- ☐ "How to Measure Depth of Penetration in Pressure-treated Timber"
- ☐ "Pressure-treated Poles"
- ☐ "Painting of Creosoted Wood"
- ☐ "Creosote"
- ☐ "Creosote-Coal Tar Solutions"
- ☐ "Disinfectants"
- ☐ "Paving with Tarmac"

REVIEWS OF CURRENT LITERATURE

CURRENT PERIODICAL LITERATURE

THE LAST OF THE ROMANS. By Joseph Hudnut. Magazine of Art. Washington, D. C., April 1941, pp. 169-173. Illus.

APROPOS of the National Gallery of Art, comes this review of the theory of a universal architecture, of an ideal beauty realized by the Greeks and Romans, which forces each generation to imitate classic masterpieces: The peristyled Pennsylvania Railroad Terminal; the prodigious steps and peristyle of the library which "crushed the Harvard Yard"; the Metropolitan Museum's steps, arches, columns, vestibule; Philadelphia with its museum on a mountain top; the National Gallery of Art, with 40 granite steps, portico, stupendous doorway disdainful of human ants, central rotunda . . . columns . . . "seducing the visitor with expense and weight," but contributing nothing to the function of a museum, which is an invitation to voyage, to provide a window through which we hear the music of other times.

The seduction which such a theology of architecture exercises over minds prepared by much of yesteryear's architectural education is entirely understood by Dean Hudnut; he confesses that the mind of the P.R.R. is beyond his reach, as is that of the great leaders of American industry and progress who turn for expression to pale temples of an imaginary Greece.

The "prevailing style" of Washington has been suggested as an explanation. But thousands of years separate the Egyptian Washington Monument via the Doric Lincoln Memorial from the Georgian White House, while there are nine different styles in the Triangle and nineteen face the Mall, from the Folger Library to the Heights of Arlington—and the National Gallery itself is a compound of at least three.

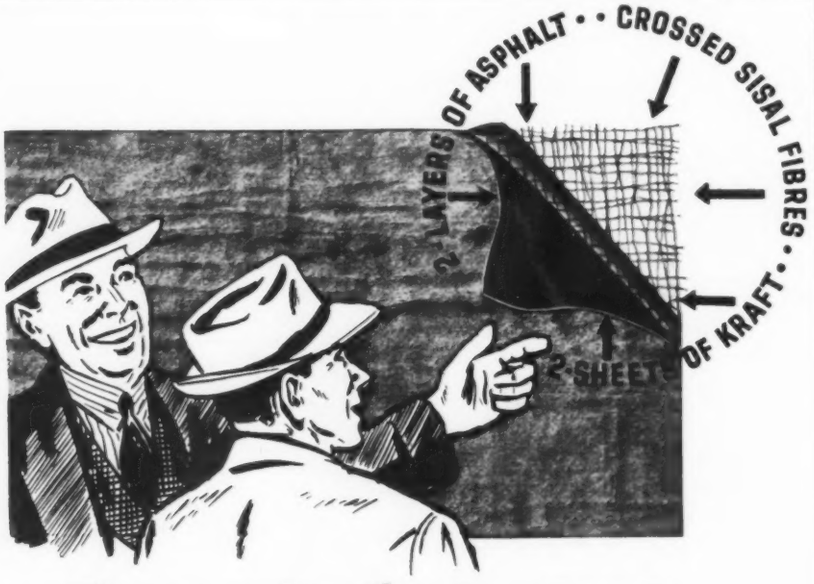
FRANK LLOYD WRIGHT AND THE MUSEUM OF MODERN ART. By Henry-Russell Hitchcock. Art Bulletin. New York, March 1941, pp. 73-77. Illustrated

AN EXPLANATION of some of the reasons why Wright "is not as well known as he is famous," by the author of the forthcoming book, "In the Nature of Materials," on buildings of Frank Lloyd Wright. The reasons are chiefly: Difficulty of seeing, by most dwellers in the eastern states, any considerable amount of Wright's 50 years' widely distributed work, consistently original; inadequacy of diagrams or photographs to make intelligible work so unfamiliar; the preponderance of perspective sketches and semi-working drawings both in this exhibition and in most writings by and about Wright over photographs and plans especially prepared for reproduction or museum display.

ARCHITECTURAL REVIEW. Cheam, Surrey, England. January-February 1941

WITH total destruction of the printing plant of Eyre and Spottiswoode, known to us mainly as the King's Printer, perished plates, photographs,

(Continued on page 32)



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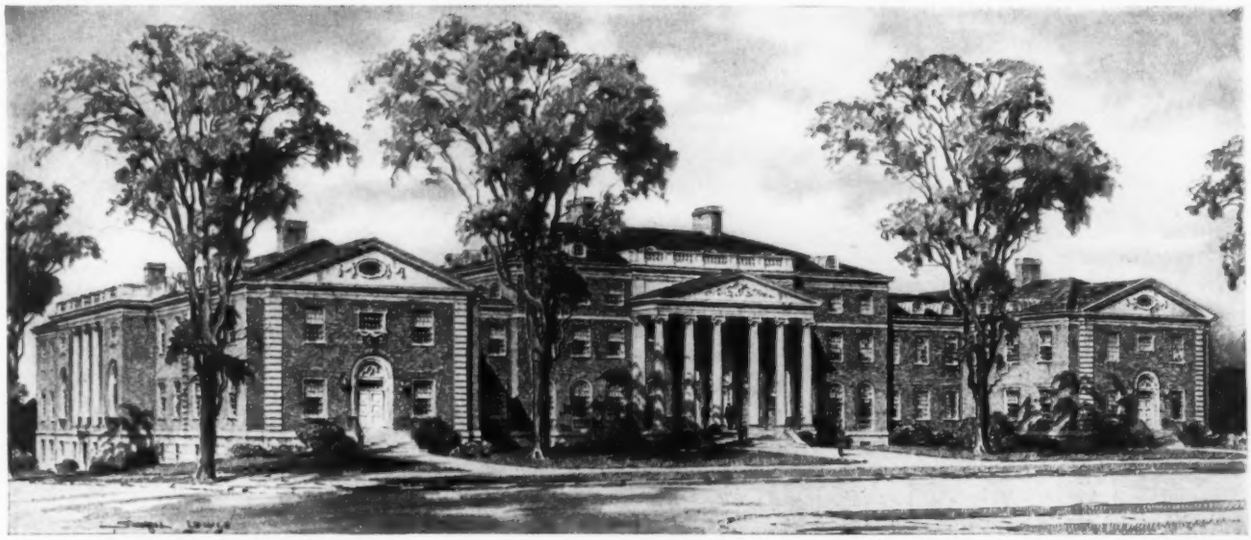
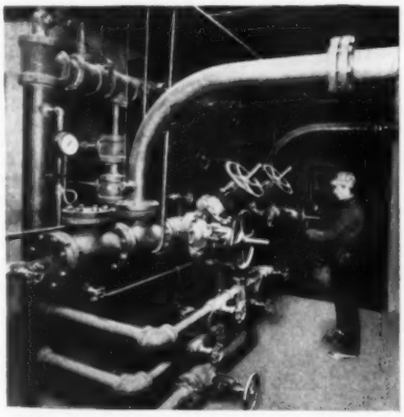


Architects: **McKIM, MEAD & WHITE, New York.** ***Consulting Engineers:*** **(Plumbing, Heating and Ventilating) TENNEY & OHMES, New York.** ***Plumbing and Heating Contractors:*** **C. H. CRONIN, INC., Boston.**



Main steam headers from two 150 h.p. boilers which are equipped and set up for class demonstration during actual service.

New $1,250,000 Waterman Memorial, University of Vermont, Burlington

Designed primarily as an administrative center, this new $1,250,000 Waterman Memorial building on the University of Vermont Campus will also house a number of activities now occupying much needed space in other buildings. It will be one of the largest, best appointed and most modern educational units in New England.

Although no special problems were involved in planning the plumbing and heating installations, the equipment and layout conform to the best and most modern practice, since this plant will be used for observation and test by the engineering classes.

Student engineers will have an opportunity to see in service a wide variety of Jenkins Valves, from giant Iron Body Gates to tiny Bronze Globe Valves. As usual, prompt delivery of all Jenkins valves was obtained from a reliable local supply house. Another example of the slogan—"In Valves, *Jenkins* Gives You Everything".

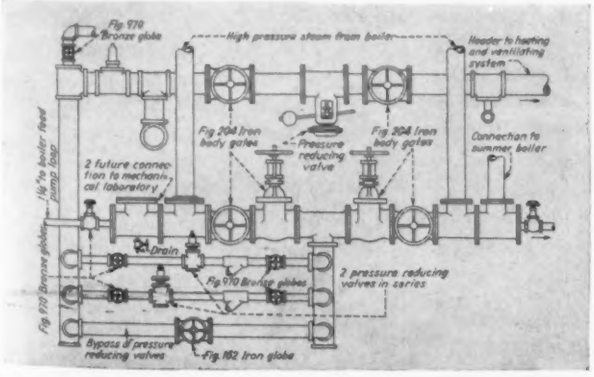
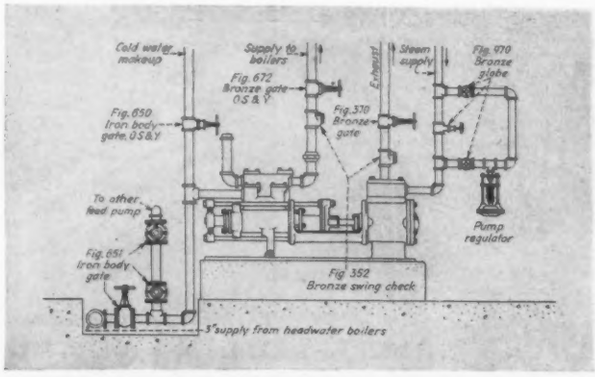


Fig. 170 Bronze globe
High pressure steam from boiler
Header to heating and ventilating system
Fig. 204 Iron body gates
Pressure reducing valve
Fig. 204 Iron body gates
Connection to summer boiler
2 future connection to mechanical laboratory
Drain
Fig. 170 Bronze globes
2 pressure reducing valves in series
Bypass of pressure reducing valves
Fig. 152 Iron globe

Detail of main steam header installation, showing placing of Jenkins Iron Body Gate and Globe Valves, and Bronze Globe Valves.



Detail of boiler feed pump installation, showing steam supply and return, feed water supply and discharge connection with appropriate use of Jenkins Iron Body and Bronze Globe, Gate and Swing Check Valves.

REVIEWS OF CURRENT LITERATURE

(Continued from page 30)

paper stock, manuscripts, records and most of the printed January number of our most esteemed contemporary. After four days' hose-playing among the ruins there were discovered, however, in the basement, practically undamaged some sheets for the January number, and these, augmented by a new printing to make up the edition, appear with the February number as a joint January-February Review, with format unchanged, paper well matched, and only a short article to explain the facts of the delay and of the slight variation in dating (some sheets bearing January and some January-February headings) which will doubtless form one of the bibliographical curiosities of the war.

EMPIRE STATE ARCHITECT. Vol. I, No. 1. Buffalo, N. Y., May 1941

WITH an editorial board including James William Kideney, president of the New York State Association of Architects and a member of the Buffalo Chapter of AIA, appears this spare, vigorous young addition to the family of our contemporaries, to represent the New York State Association of Architects, Inc.

Announcements of the new constituent organization, the Mid-Hudson Valley Architectural Society with Myron S. Teller president, reports of the Association's Legislative Committee's activities and of its December Convention, discussion of some legal pitfalls and of the need of radio publicity for architecture occupy this number's well packed pages.

THE JOURNAL OF AESTHETICS AND ART CRITICISM. No. 1. New York, The Philosophical Library. Spring, 1941. April

ARCHITECTS who looked forward to a discussion of the long-heralded first number of the *Journal* with its promise of a philosophical handling of "Architectural Arts in the Soviet Union" were only somewhat consoled when, as a substitute, the architectural article in the first table of contents was "New Forms in Canadian Architecture," only to find that a third editorial decision had appropriated the expected pages for book reviews. Two further quarterly numbers possible within the calendar year may satisfy anticipation.

ARCHITECTURE OF THE PROVINCE OF QUEBEC. Journal of the Royal Architectural Institute of Canada. April 1941. Vol. 18, No. 4

THIS is a special Quebec number prepared by the Architectural Association of the Province of Quebec. Included in a wide variety of buildings, largely modern, are some examples of old buildings important because of historic value, of inherent beauty, or because they are peculiar to the Province of Quebec. "Recent Work in the Laurentians" shows the expansion of the summer camp into winter sports homes—whether frame, squared log or otherwise—with the necessary inns and ski lodges.

fedders
AIR CONDITIONING DIVISION
Unit Heaters
Cooling Coils
Heating Coils
Comfort Coolers
Air Conditioning Units
Railroad Car Heating Convectors
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AUTOMOTIVE DIVISION
● World's largest independent manufacturer of radiators for standard factory equipment on millions of automobiles and trucks. Also automobile heater cores, aircraft engine and oil cooling equipment, etc.
REFRIGERATION DIVISION
Commercial refrigeration equipment, Finned Coils, Unit Coolers, Condensers, Valves, Ice Cube Makers, Water Coolers, etc.
2
BIG FACTORIES
BUFFALO, N. Y.
OWOSSO, MICH.
FEDDERS MANUFACTURING CO., BUFFALO, N. Y.

RICHMOND H. SHREVE, elected president . . .

AIA CONVENTION

YOSEMITE NATIONAL PARK and LOS ANGELES
MAY 17 to MAY 21

THE NEED for professional service which only architects can render in the national defense program, and post-war problems of the building industry chiefly concerned 400 members, delegates and guests of the American Institute of Architects at its 73rd annual convention, which opened at Yosemite National Park, Calif., May 17, and closed May 21 at Los Angeles.

A resolution of immediate significance adopted by the Institute called for the appointment by the president of the Institute of a national chairman for civilian protection, with power to co-ordinate existing agencies and to set up a nationwide organization of the profession for service to the country.

The Institute also went on record against a trend which has developed in the construction industry, wherein agencies have assumed the professional functions of architects and engineers. Creation of a national housing council was advocated, to determine the location, planning and management of all multiple-unit housing in which government has an interest.

Richmond H. Shreve of New York was elected president to succeed *Edwin Bergstrom*. Officers reelected were: *Walter MacCornack*, dean of M.I.T. School of Architecture, vice-president; *Charles T. Ingham*, Pittsburgh, secretary; and *John R. Fugard*, Chicago, treasurer.

Regional directors were named as follows: *C. Julian Oberwarth*, Frankfort, Ky., Great Lakes District; *Harlan Thomas*, Seattle, Wash., Western Mountain District; and *Frederic A. Fletcher*, Baltimore, Md., Middle Atlantic District. *Matthew W. Del Gaudio* of New York was elected State Association Director.

The keynote address prepared by Mr. Bergstrom, who was unable to attend the meeting because of work on which he is engaged for the War Department, was delivered by *Clair W. Ditchy* of Detroit, who presided. Mr. Bergstrom said:

"The world continues in increasing turmoil. Nations are engaged in war for aggrandizement and for protection from aggrandizement; to establish one ideology of government and to maintain another ideology. Cities are being destroyed; men, women, and children are being harassed and killed in increasing numbers every day. Our life savings and our energies are being lavished on the production of powder and arms and the means of using them effectively.

"The architects are vitally affected by these disturbances. The normal tenor of their practices is completely upset and they are engaged almost entirely in the planning of buildings for war. They realize fully the necessity of doing the things which the defense program calls for, and it af-

(Continued on page 40)

. . . succeeding EDWIN BERGSTROM

fords them a field wherein they can, and do, render a notably patriotic service. But they find it difficult to adjust themselves to the loss of all sense of value in a program in which everything must be sacrificed to speed. They also find it difficult to adjust themselves quickly to the magnitude of a program that comprises somewhat more than 200,000 structures and wherein the simplest element of planning multiplies into an astonishing volume, and an unused area of 10 square feet in one of the army cantonment buildings causes a waste of more than $250,000 in the construction program, for instance.

Fine service of planning profession

"The architectural profession has responded freely and wholly to the demands of the defense program. Architects have given a great deal of money and personal service for the development of the questionnaires which are proving so useful in the selection of architects for the defense projects. Architects are planning the far-flung Atlantic bases which guard our continental area. They have planned many structures for the Navy and the Army. They have planned factories to produce the facilities of war, warehouses in which the facilities will be stored, shops in which they will be repaired, housing for the Army and the Navy personnel and for the workers in the defense factories and the scores of other buildings comprised in the defense program. They have moved their offices into the field and expanded their facilities to keep their performances ahead of the contractors who produced the 200,000 buildings within a period of a few months. The architects and the other planning professions have done a fine service for their country under extremely unusual and difficult circumstances.

"It has been unfortunate that there have not been enough defense jobs so that every architect might plan at least one of them. It has been equally unfortunate that all of the federal agencies have not seen eye to eye on the policy of employing architects and others of the planning professions to develop their planning programs.

"The major endeavors of the Institute and its officers during the last 18 months have been directed to solidifying the interests of the Government in the profession by making it increasingly conscious of the importance of the services that architects can render it, and to impress the profession with the necessity of rendering its services competently.

Government relying on services

"There is not the slightest question that much of this objective has been achieved, and that government is relying more and more on the services that architects can give it. The constant and untiring efforts of your representatives in Washington have achieved a result for the profession hitherto not approached in government services, an achievement worth far more than all of the time and money lavished on it.

"Early this year, your President, with the President of the American Society of Civil Engineers, the immediate Past-President of the American Society of Mechanical Engineers, and the President of the American Society of Landscape Architects, were selected by the War Department to assist in the selection and planning of the sites for new camps and plants, and in the planning of its buildings. These men were asked to do this because the department became convinced that the planning professions they represented had something to contribute to the 1941 program that had been lacking in the previous program. They have worked every day and long into the nights in the discharge of their responsibilities. They have built up competent staffs of consultants and departmental heads, calling in architects, engineers and landscape architects from private practice. All of them are there for the period of the emergency, and have agreed to remain so long as their services are useful to the government during that period. This coalition of a governmental department with the professions is a notable achievement.

Long struggle ahead

"There is no evidence that we can expect to revert soon to our normal functioning and ways of life, and the profession should prepare itself to accept the long struggle that seems ahead. It may mean a permanent rather than a temporary readjustment for us, and certainly our normal practices will continue to be disarranged for a long time and we must adjust ourselves for that eventuality. We will remain dependent mainly on government commissions and employment for our subsistence, and we must accept these commissions and perform them with complete competence."

Mr. Bergstrom sketched the recent growth of the Institute.

"Its corporate membership has held its own well," he said. "The associates of chapters have almost tripled in number. The state association members, which were five in number two years ago, now number 21, with a combined membership of more than 5,400 members, of whom at least 4,000 are non-Institute members. More than half the architects of the United States are now under the aegis of the Institute."

Plimpton speaks

Emphasis on the challenge that faces architects in undertaking the job of rebuilding America marked addresses by *F. A. Plimpton*, President of Producers' Council, and *Thomas S. Holden*, President of F. W. Dodge Corporation and Editorial Director of ARCHITECTURAL RECORD.

"Every element in the building industry has a vital stake in a comprehensive rebuilding program," Mr. Plimpton asserted. "All will now work together to formulate a program so challenging in its objectives that it will command thoughtful attention and support of all industry and business, and of those in Washington who are so greatly concerned with what may happen when the present emergency is ended.

"If this nation can provide twenty billion a year for defense it can more clearly provide twenty billion a year for rebuilding and revamping its physical plant. If it has the courage to face realities, it can forestall any precipitous slump when our productive facilities and manpower can be released from defense.

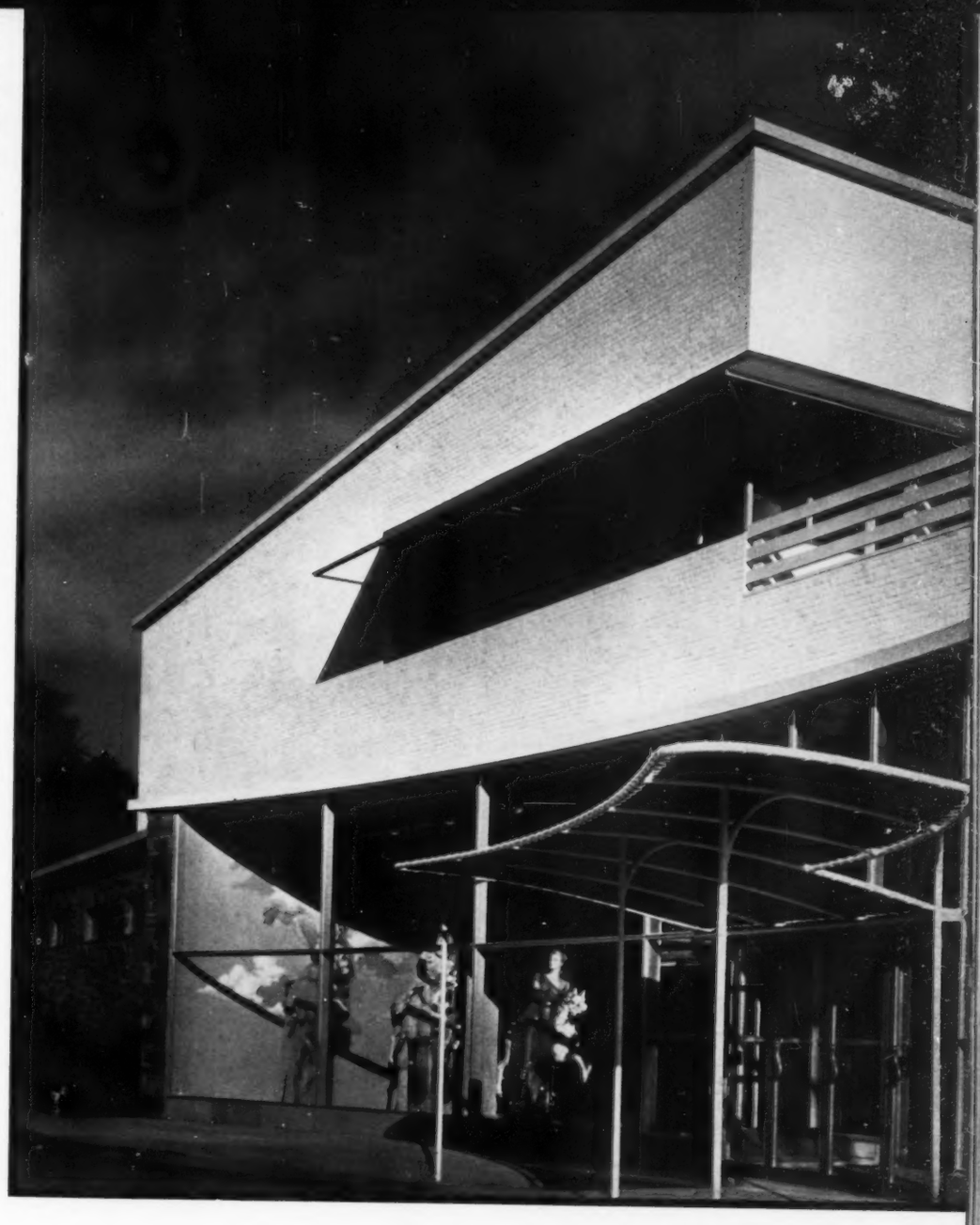
"The construction industry, which this year will probably account for one-sixth of the national income and which is increasing at a greater rate than the average of all industries, is at a point where its very existence depends upon militant action."

Holden tells statistical situation

Mr. Holden sketched the current statistical situation of the building industry and discussed important factors in emergency defense activities

(*Continued on page* 114)

RAYMOND LOEWY, Designer • STARRETT & VAN VLECK, Architects



Lord & Taylor

SUBURBAN APPAREL SHOP

MANHASSET, LONG ISLAND

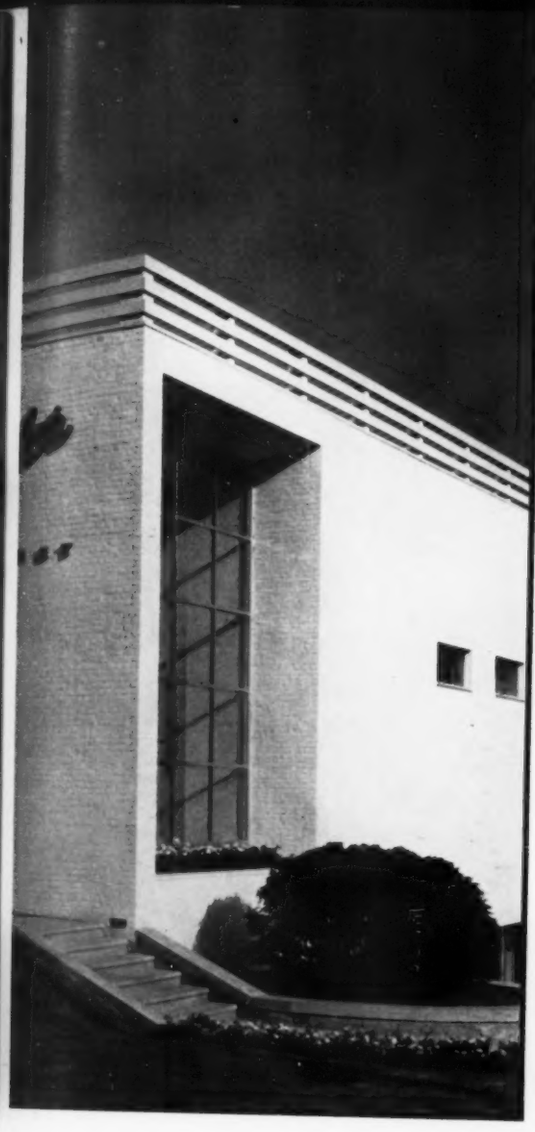
OUTSTANDING among the satellite units opened in recent years by large city department stores is this striking new shop for women's and children's apparel and accessories—Lord & Taylor's first suburban branch. For any architect concerned with a store, display or merchandising design problem, the shop offers fresh solutions all along the line. Located in a sizable suburban town, the store is within easy driving distance from several others. Relatively few patrons, however, will be casual passers-by; by far the greater number will arrive by car. Hence the conventional scheme of show windows to attract pedestrians has been discarded in favor of a design wherein the entire building is the eye-catching attraction; the whole selling area of the main floor may be glimpsed from the boulevard through the front window walls; and the attractive, landscaped parking area is an invitation to stop.

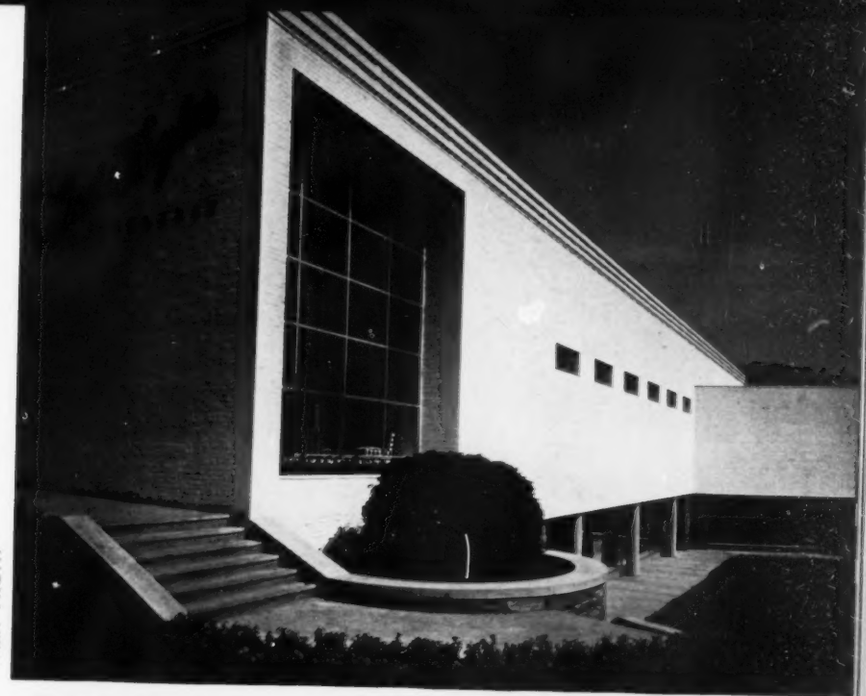
All photos of Lord & Taylor by Robert F. Damora

GARDEN AND PARKING AREA

Lord & Taylor

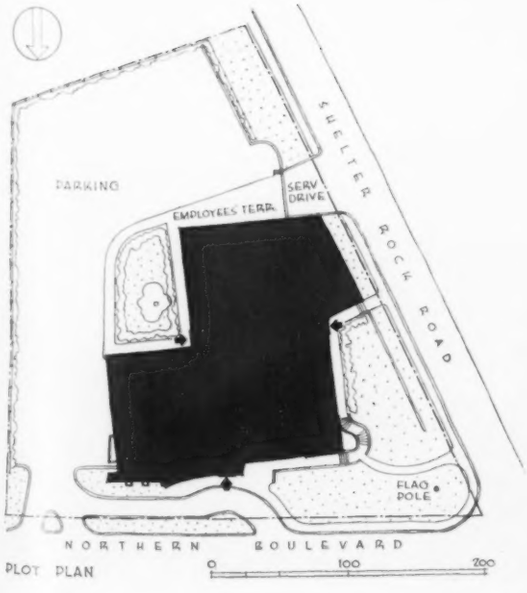
THE STORE COVERS 58,000 sq. ft. of floor area. Because of a sloping site—a change in grade of approximately 18 ft.—each of the selling arenas is, in fact, a ground floor. The lower level may be entered directly from the side street, by an outside walk and stair at the front of the building, or by an interior stairway. The penthouse—at present housing only air conditioning equipment—allows for future expansion. Lawns, gardens, terraces, flowered walks, built-in planting tubs and the handsomely landscaped parking area are an integral part of the design. The approach to the store from the boulevard front curves to a concave glass-enclosed vestibule. Huge clear windows at the left both open up the view of the store to the outside and furnish daylighting within; the vertical windows in the fieldstone portion at right accent the design and at night become spotlighted display points for manikins. Since auto traffic will account for a great many patrons, the parking area entrance is quite as important as the others. In the angle of the building at this point, large window areas overlook a pleasant lawn and garden. The building foundation rests on a sand and gravel bottom with structural supports bearing on spread footings. Superstructure consists of a reinforced concrete frame and long-span pan floor construction. Wall materials are brick and fieldstone.





WEST FRONT

PARKING AREA ENTRANCE



PLOT PLAN

NIGHT VIEW

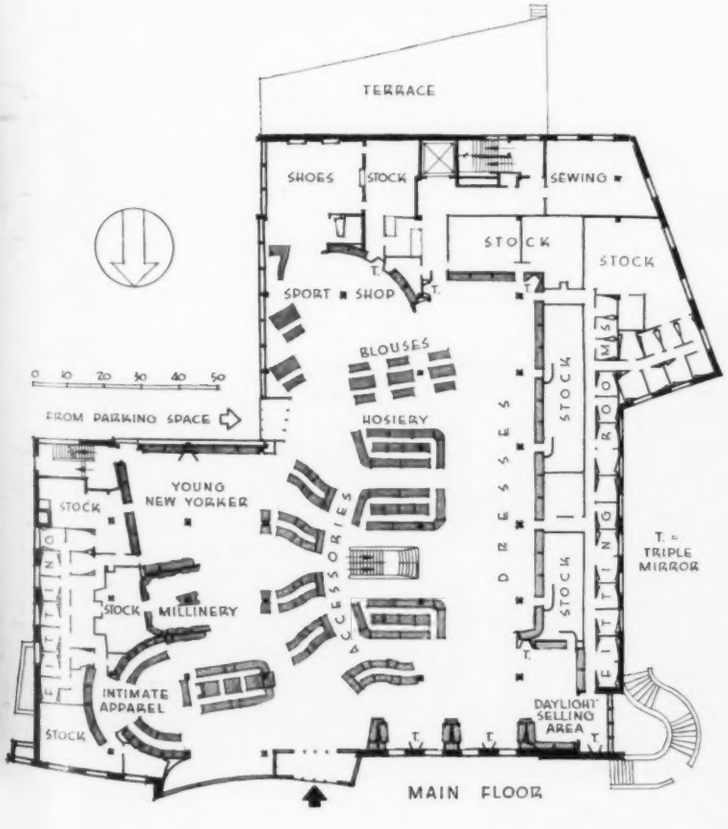
DAYLIGHT SELLING AREA

Lord & Taylor

MAIN FLOOR

FLOOR-PLAN LAYOUTS are a noteworthy combination of two frequently opposed store-planning theories—open planning wherein all goods are grouped within a single large selling area, and the idea of independent departments in which various types of merchandise are handled separately. Individual departments exist, but they are set off—not shielded—from the main floor by low partitions of varying shapes that form separate selling alcoves and by changes in decorative treatment.

A whimsical dance-program theme distinguishes the Intimate Apparel Shop. In the Millinery Shop, red accents occur both on mirror frames and in the chair upholstery. The Young New Yorker Shop has sentimental wall decorations of doves and flowers painted in pastel tints. Walls of the Shoe Shop are surfaced in a rose-patterned wallpaper. To set off the Sports Clothes area, a trompe l'oeil mural on the concave wall transforms wall display cases into tents at a country fair; the triple mirror into a ticket booth. Wall cases for dresses line the whole west wall, except at the north end, where an enormous window forms a daylight selling area. All of these elements are harmonious, however, and are integrated by the all-over gray-taupe carpet, selling counters and cabinets of gray-finished oak, the free-standing display cases set up on molded bronze legs, and the row of plastic and bronze chandeliers. In back of each department are the necessary stock, sewing and fitting rooms. Around the stair well leading to the lower floor is a heavy glass balustrade.



SHOES

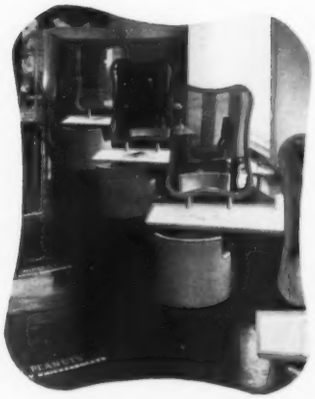
SPORT ACCESSORIES

DRESSES

INTIMATE APPAREL

YOUNGER CROWD SHOP

BEAUTY SALON

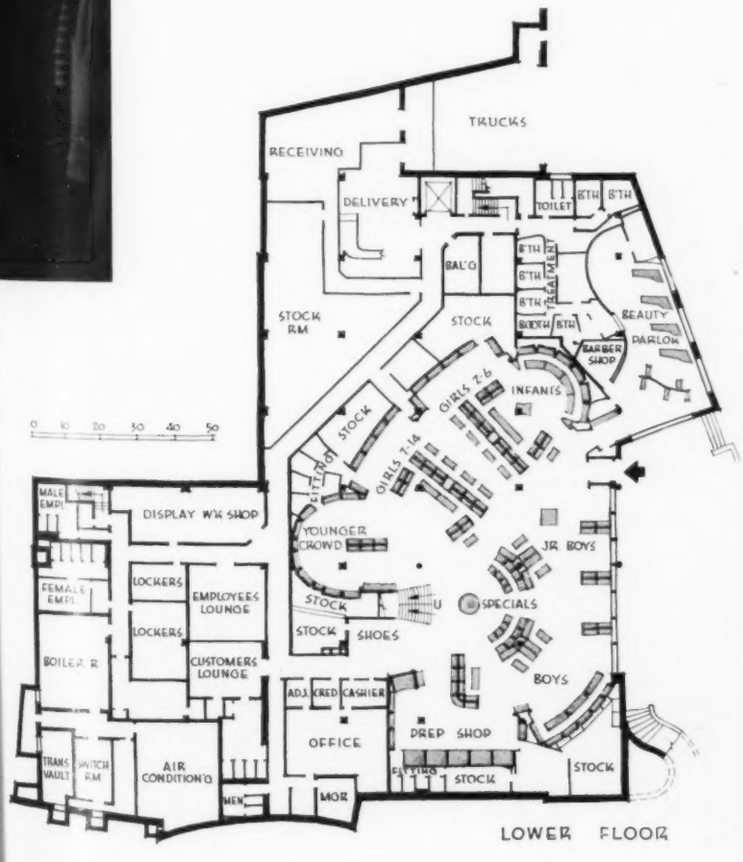


HAIR-DRESSING TABLES

Lord & Taylor

LOWER FLOOR

Like the main floor, the lower level, devoted to children's clothes and a beauty salon, is laid out in an informal open plan, with specialty shops centering on perimeter alcoves. At the foot of the stairs is a semi-circular counter unit with a pierced screen in back for display. Boys' clothes and furnishings occupy the north end of the floor. Backgrounds are of red plaster and gray-oak paneling. At the left of the stairway, along the east wall, are shops for girls of different ages. In the Younger Crowd Shop, the chair backs are decorated with painted hair ribbons. On the south wall is the Infants Shop—"a little bit of heaven"—done out in pink and blue, with a blue sky and white clouds painted both on background and side walls and up onto the ceiling. The counter is surfaced in blue rubber with white painted stars. Quite distinct from the sales floor is the exotic beauty parlor, at the south end of the area. Manicure tables are set against a curved wall which shields the hair-dressing tables from general view. In the blue-green rubber tile floor are insets of clever sayings about women by famous men. In back of this area is a series of fully equipped treatment rooms. Office space, service and employees' rooms and an inside trucking platform border the public area.



LOWER FLOOR

INFANTS

GIRLS

BOYS

STAIRS TO MAIN FLOOR

Lord & Taylor

LIGHTING

Both floors have an unusual amount of daylighting from the many windows. In addition, there is generous ceiling and indirect light at varying levels. Ceiling fixtures throughout (except for the main-floor chandeliers) are flush, recessed units. These are laid out on regular spacing with sprinker outlets and air-conditioning vents. Cove lighting in a dropped ceiling unit throws light up against plain overhead surfaces. Counter display cases and the side wall hang-rod cases contain fluorescent combinations. Key merchandising areas are spotlighted. In the Beauty Salon, circular flush ceiling fixtures distribute warm, flattering light on the manicure and hair-dressing tables.

HEATING AND AIR CONDITIONING

Air conditioning is store wide, with complete temperature and humidity control. Ceiling distributing vents are set in series to form a pattern with the lighting fixtures and structural columns. All ducts are concealed in the dropped ceiling and in the cove units. Exhaust grills in the walls above the Intimate Apparel Shop are fashioned like bird cages and serve for display as well. The air conditioning machinery is housed in the penthouse. To supplement the system for constant heat control, radiators are installed at strategic points.

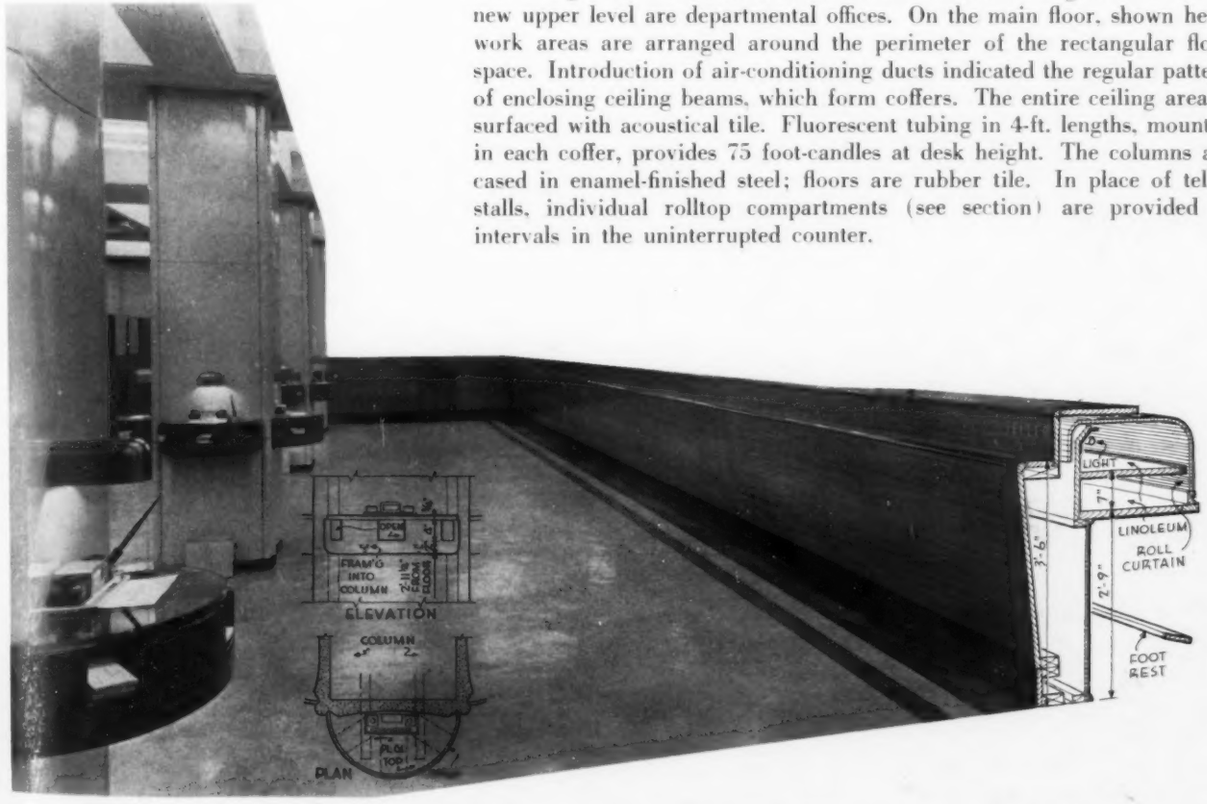
CASES AND COUNTERS

The freestanding sales and display cases are a flexible combination of units. The display cases, mounted on bronze legs, alternate with the counters, are slightly higher and are never used for selling. Sales counter tops are surfaced with rubber. Special eye-level display cases are built in the walls of both the main-floor shoe shop and the under-stair wall alongside the children's shoe shop on the lower level. Wall dress cases and the fitting rooms are finished in a high-gloss lacquer, in a series of harmonious pastel tints.

FITTING ROOM (Note folding partition)

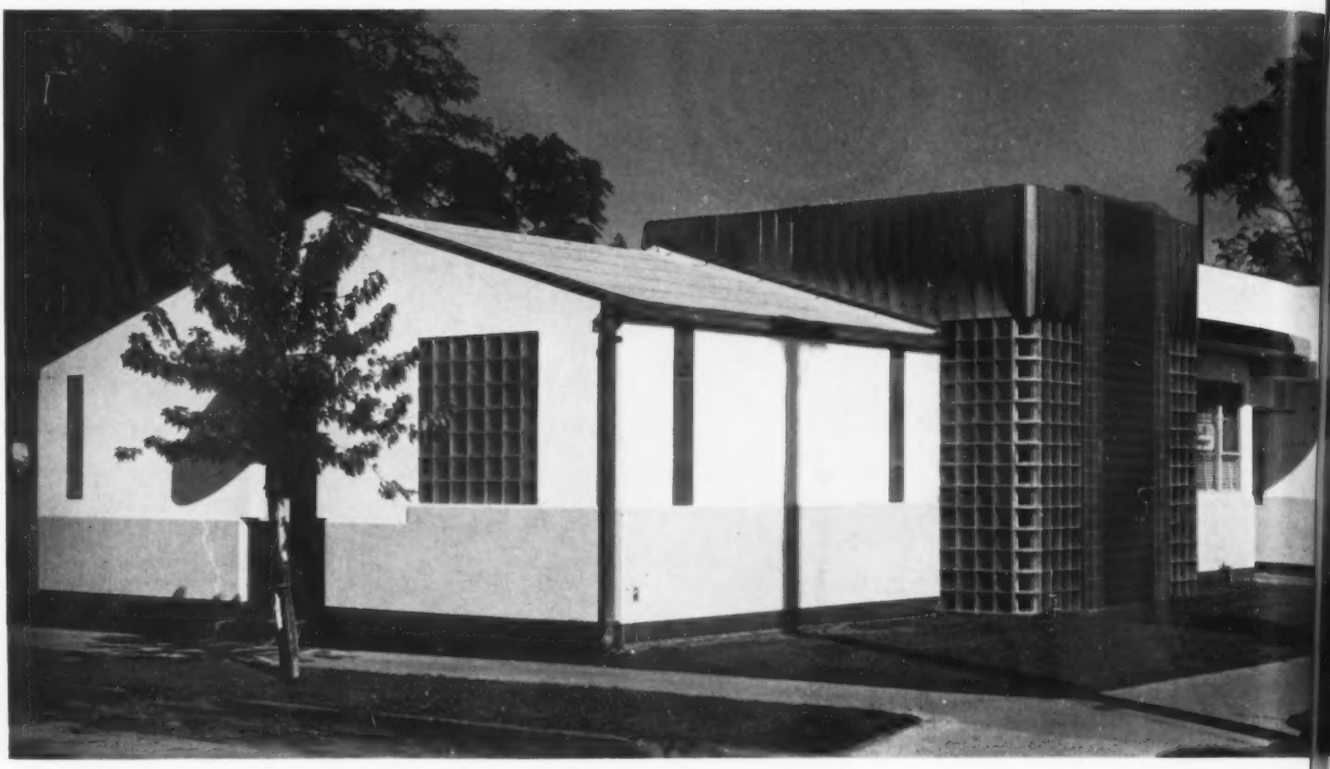
REMODELED BANK

SECURITY NATIONAL BANK, GREENSBORO, N. C. CHARLES C. HARTMANN, ARCHITECT. An entire new floor was introduced in the middle of the 27-ft. height of an old-school Italian Renaissance banking room. On the new upper level are departmental offices. On the main floor, shown here, work areas are arranged around the perimeter of the rectangular floor space. Introduction of air-conditioning ducts indicated the regular pattern of enclosing ceiling beams, which form coffers. The entire ceiling area is surfaced with acoustical tile. Fluorescent tubing in 4-ft. lengths, mounted in each coffer, provides 75 foot-candles at desk height. The columns are cased in enamel-finished steel; floors are rubber tile. In place of teller stalls, individual rolltop compartments (see section) are provided at intervals in the uninterrupted counter.



CHECK DESK built into enameled steel column casing

SECTION OF COUNTER showing teller's rolltop compartment



4 SMALL PROFESSIONAL

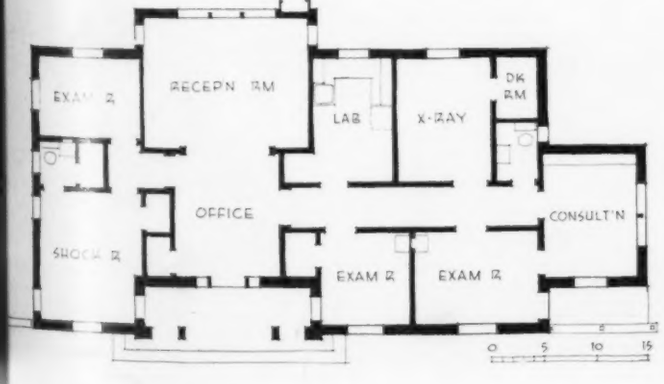
1. ARCHITECT'S AND DOCTOR'S OFFICES COMBINED

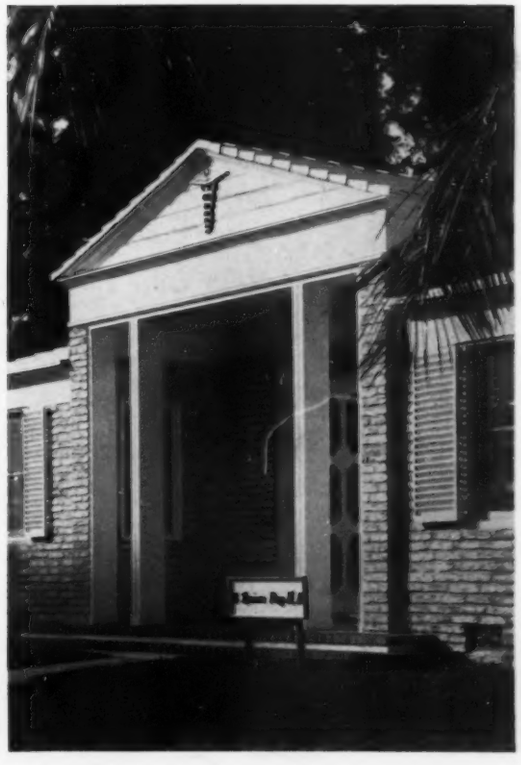
DE LAPPE BUILDING, MODESTO, CALIF. RUSSELL GUERNE DE LAPPE, ARCHITECT. Representative of an increasing trend toward construction of small professional office buildings within community areas which they directly serve is this building for the use of the architect and a physician-surgeon. The combined-use plan provides complete facilities for each of the offices; yet the areas function independently. Although essentially a frame and stucco structure, a number of finish materials have been introduced. A ferro-enamel dado surmounts a base course of faience tile; trim is of stainless steel. The block enclosing the doctor's consultation room combines stainless steel with tile and glass block panels.

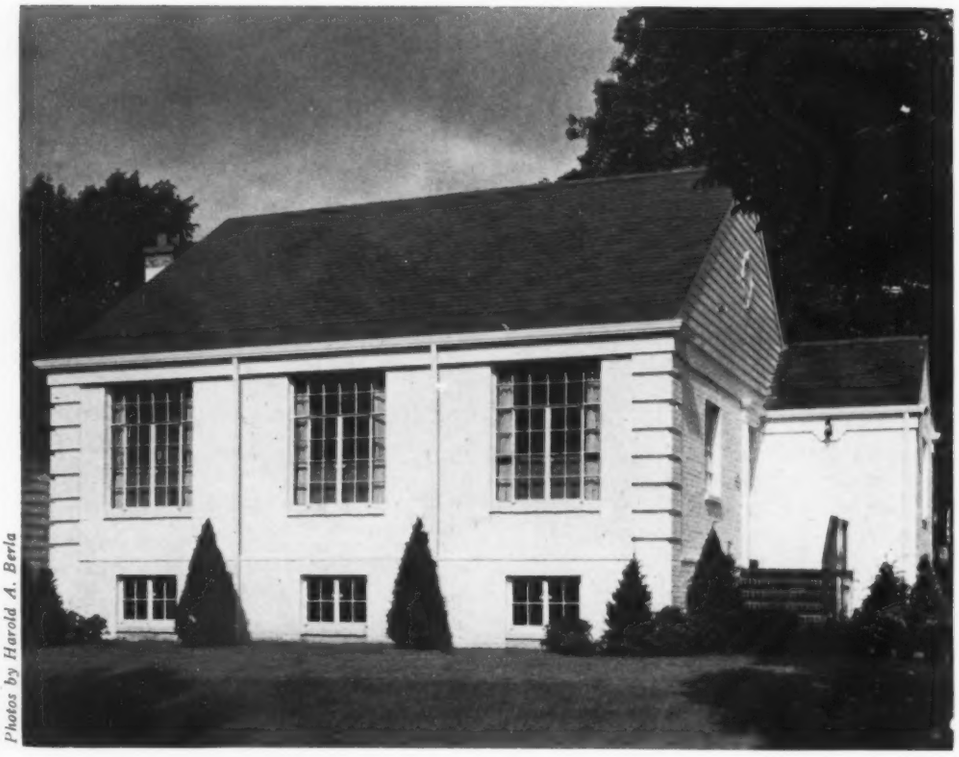
OFFICE BUILDINGS ☆

2. OFFICES FOR A PHYSICIAN-SURGEON

OFFICE OF DR. C. LARIMORE PERRY, MIAMI, FLORIDA. RUSSELL T. PANCOAST, ARCHITECT. Located outside the city's main business district, these offices for a physician-surgeon are readily accessible both to near-by patients and those arriving by auto from a wide surrounding residential area. Walls facing the street are of unpainted slump brick; rear walls are of stuccoed and painted concrete block. Interior partitions are of studs finished with building board, treated for sound deadening. The roof is surfaced with white shingle tile. The building is air conditioned.







Photos by Harold A. Berla

OFFICE

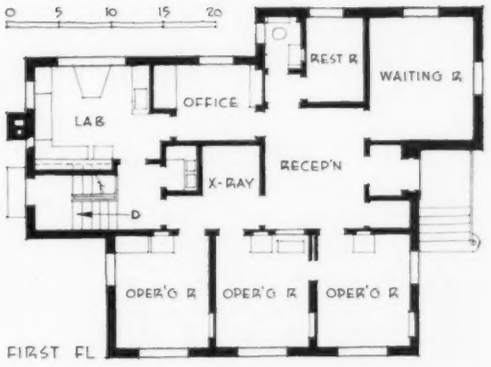
The three operating-room windows indicate the building's function but do not detract from its domestic character. Scale of the furniture chosen for the public areas is such that rooms of minimum dimensions have an appearance of maximum space.

4 SMALL PROFESSIONAL

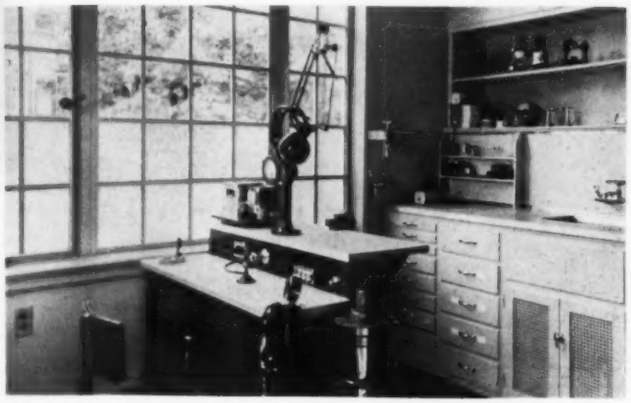
Photos by Waters & Hamlin Studios

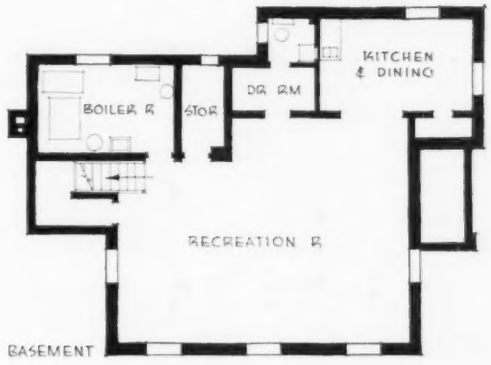
3. DENTAL OFFICE BUILDING

OFFICES OF DR. GEORGE STRAUSSBERG, SOUTH ORANGE, N. J. ARTHUR N. STARIN, ARCHITECT. Virginia B. Starin, Interior Decorator. In this building, designed to harmonize with the residential area in which it is located, two dentists occupy the corner operating rooms, the one between being used for emergency patients. From a central location, the receptionist has control of all main rooms. In the basement kitchenette, lunches are prepared; the recreation room is for the owner's use.



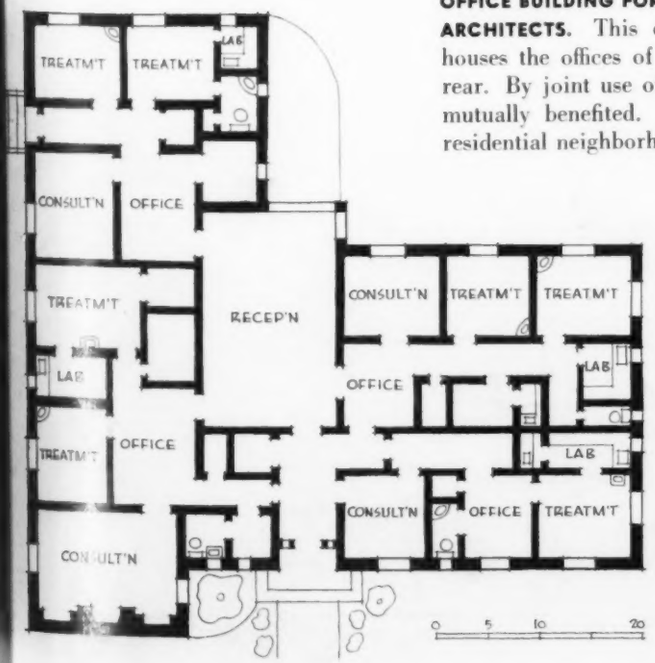
LABORATORY





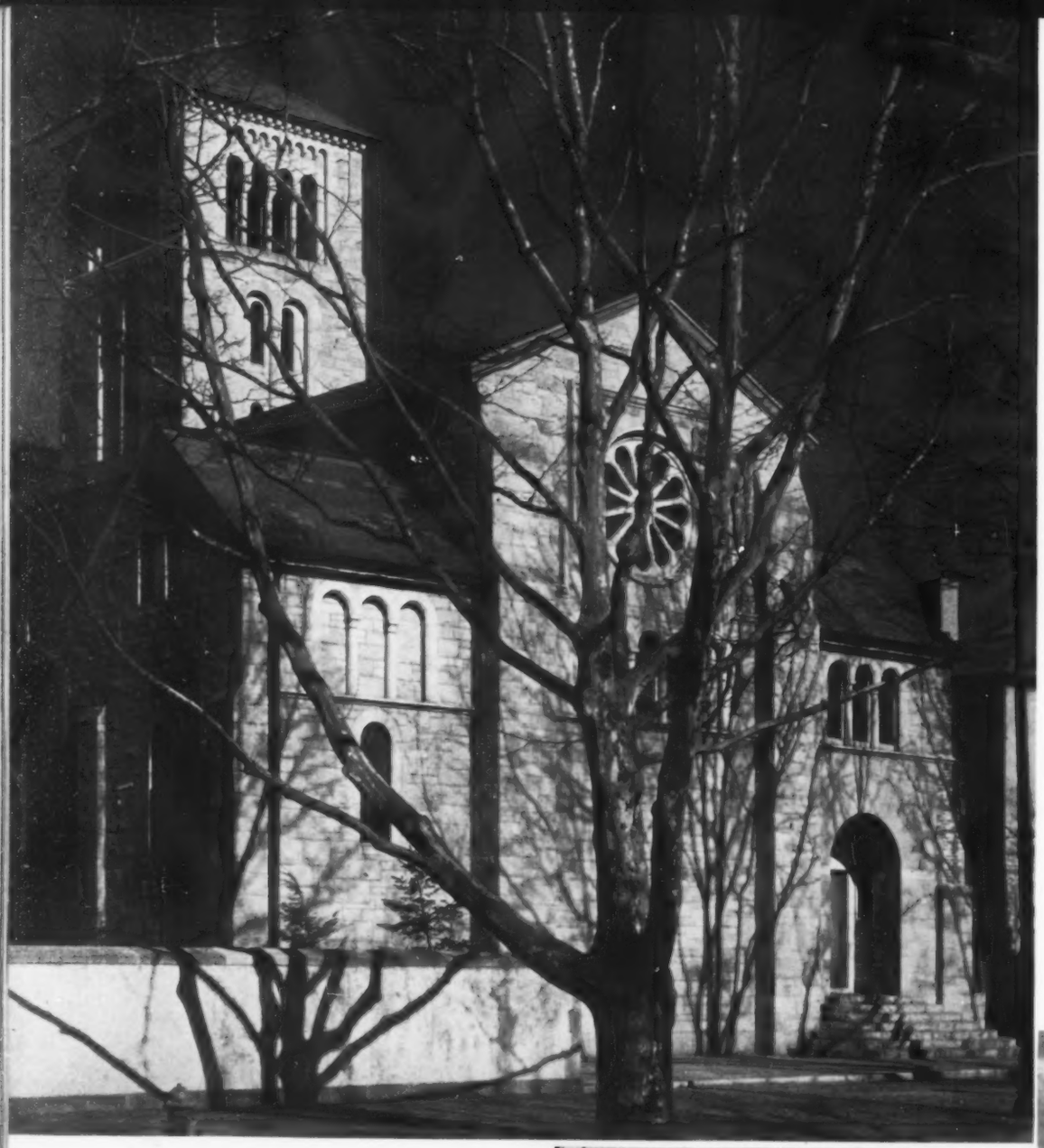
OFFICE BUILDINGS ☆

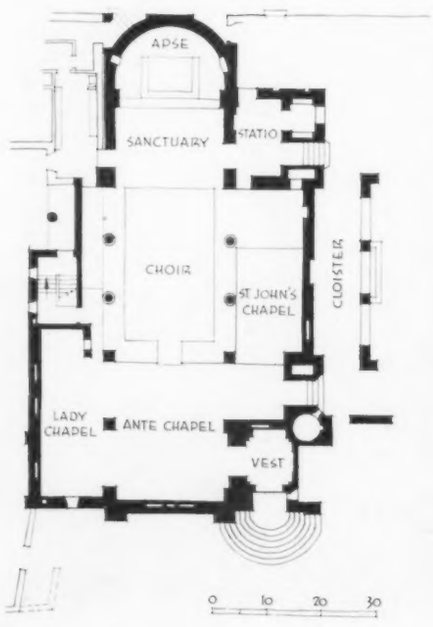
4. NEIGHBORHOOD MEDICAL BUILDING



OFFICE BUILDING FOR DR. WILLIAM W. REICH, BERKELEY, CALIF. MILLER & WARNECKE, ARCHITECTS. This compact building, planned around a central reception room, houses the offices of seven doctors. Ample off-the-street parking is provided at the rear. By joint use of certain facilities and equipment, practitioners and patients are mutually benefited. Location of the building within easy access of an extensive residential neighborhood is yet another instance of the trend toward decentralization.

CHURCH

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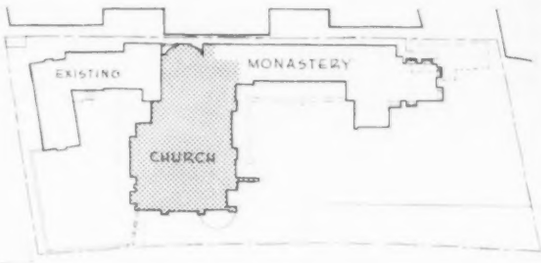
FOR A MONASTERY

THE CONVENTUAL CHURCH OF ST. MARY AND ST. JOHN, CAMBRIDGE, MASS. CRAM AND FERGUSON, ARCHITECTS. This church, attached to the mother house of the Society of Saint John the Evangelist (see plot plan) serves as the community chapel and is in no sense a parish church. Hence, the ante-chapel, available to the public, is relatively small, and the main floor space is devoted to the monastic choir and sanctuary. There is a crypt under the whole church. Exterior of the building is of warm-toned seam-face granite with buff limestone trim. Light-gray granite, left with a natural split face, is used for interior wall surfaces, window jambs, etc.; interior cut stone is of limestone. Floors throughout are paved—green slate in the ante-chapel; marble in the choir and sanctuary. All roofs are covered with slate. The high altar (see next page) is constructed of black marble with a front panel of variegated green. The baldachino over the altar is of red levanto and fleur-de-peche marble. The choir, furnished with simple stalls of English oak, is separated from the ante-chapel by a marble parapet and a wrought-iron screen (see photo at right).

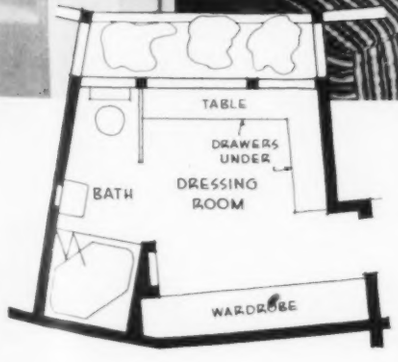


THE CHOIR

ALTAR AND BALDACHINO

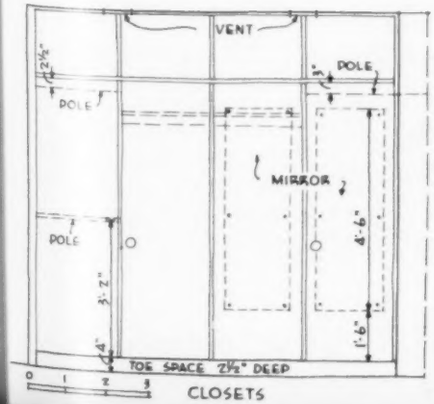
LADY CHAPEL

RESIDENTIAL DETAILS • BUILT-IN FURNITURE

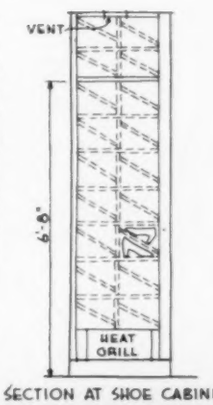


1. J. R. DAVIDSON, Designer

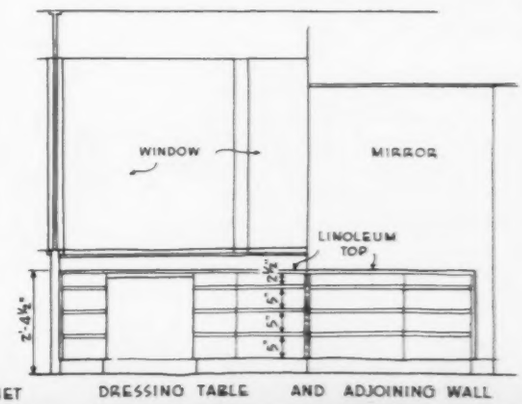
THIS COMBINED DRESSING ROOM AND BATH is completely furnished with built-in equipment. Since the function of a dressing room is to provide not only space for dressing but space for storage, the furnishings consist almost entirely of cupboards, drawers and wardrobes. The combined dressing table and chest of drawers is of wood, painted eggshell color, topped with Chinese red polished plastic material. Walls are finished in synthetic-surfaced composition board, with polished aluminum trim.



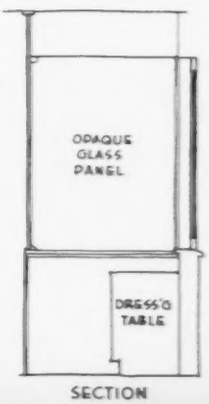
CLOSETS



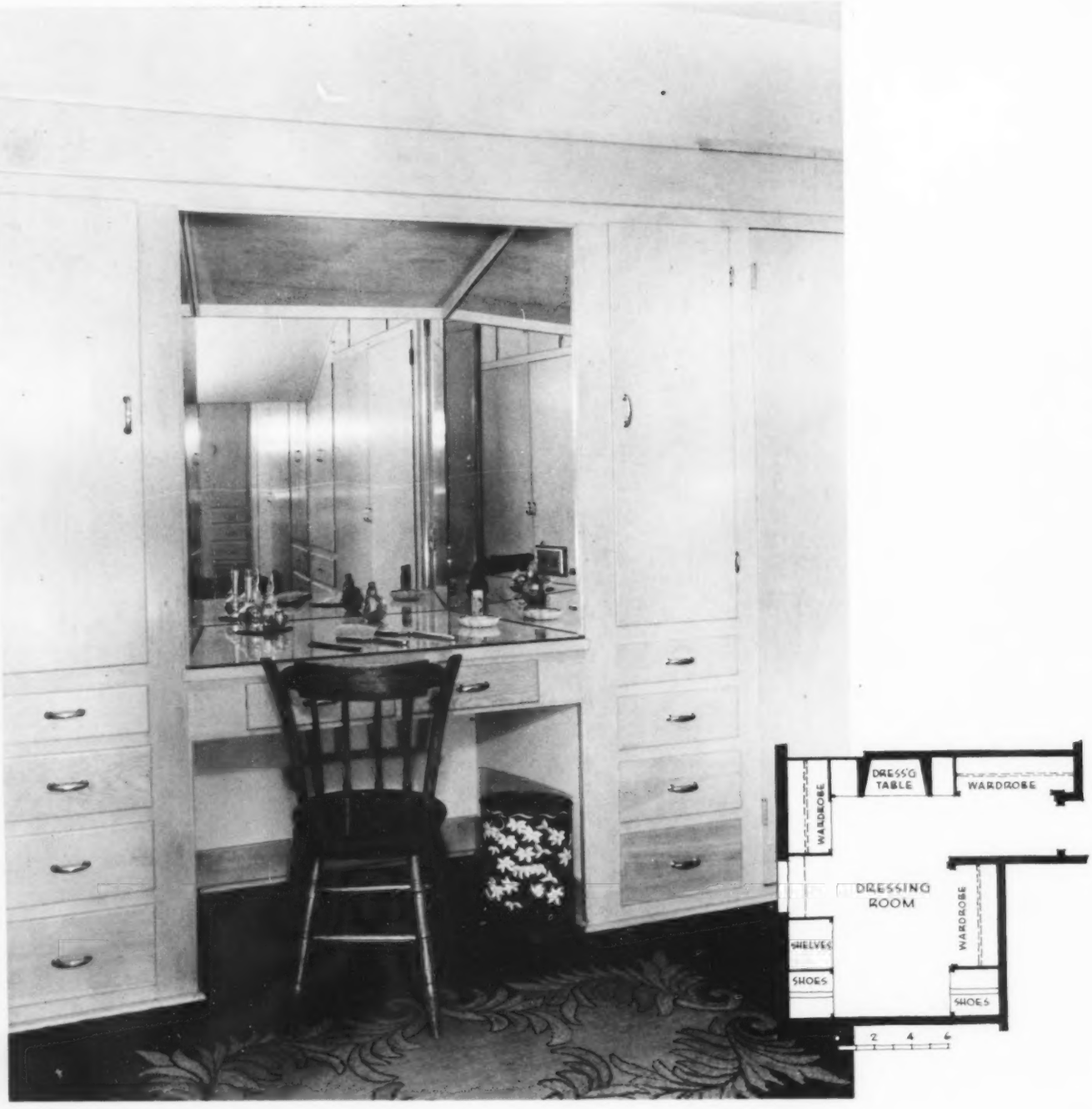
SECTION AT SHOE CABINET



DRESSING TABLE AND ADJOINING WALL

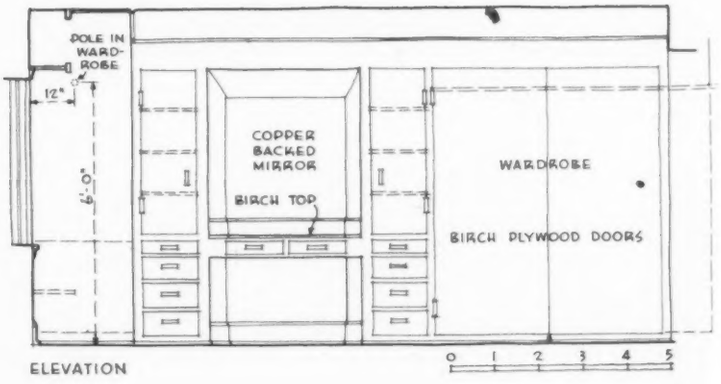


SECTION

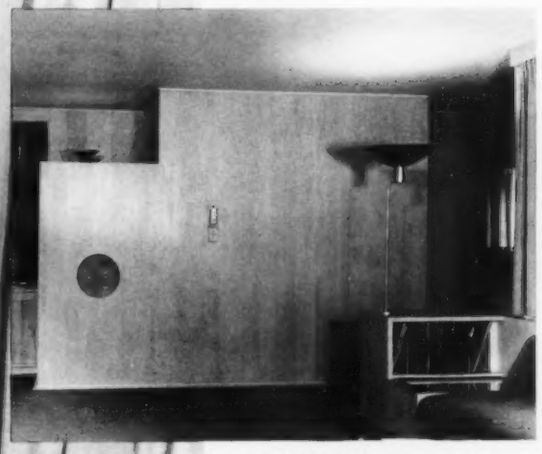


2. HOOTON and TIMPSON, Architects

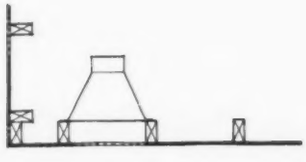
A BUILT-IN DRESSING TABLE flanked on either side by storage units of various types. The table consists merely of a row of drawers surfaced in birch, with a copper-backed mirror set in the recess formed by the wardrobes on either side. Construction is simple; all woodwork is birch. Drawer fronts are stained and finished with flat varnish.

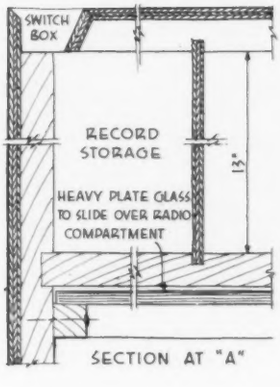


ELEVATION



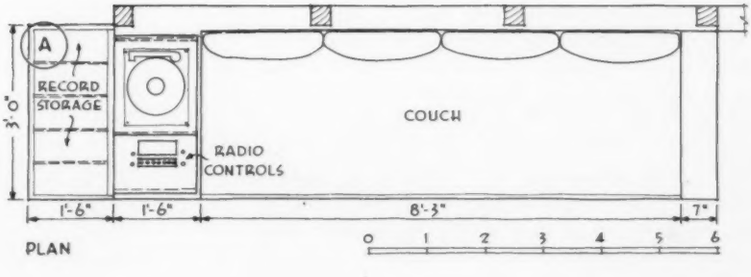
LOUDSPEAKER UNIT

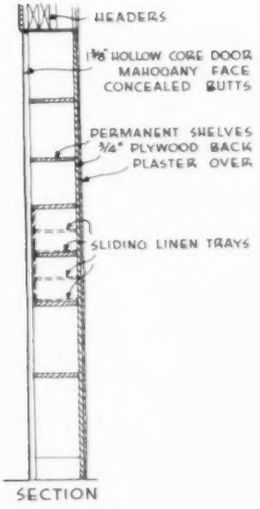




3. RAPHAEL S. SORIANO, Designer

THIS RADIO AND PHONOGRAPH UNIT is integrated with a storage shelf for records, a lamp, and a couch. The loud speaker for the radio and phonograph is nearby (see inset). The heavy glass panel which covers the radio and phonograph slides back in a groove under the record storage shelf. Controls for electric switches are built into the top of the shelf. All wood is magnolia wood. The couch is upholstered in olive green; carpet is solid sand color, draperies light lemon yellow desert cloth.





4. QUIN HILL, Designer

THIS COMPACT CLOSET provides storage for china, glassware and linen. The closet is recessed into the wall and hinges are concealed, so that the doors, when closed, form a flush surface with the wall. This repeats the treatment of the living room, off which the dining alcove opens. The mahogany woodwork has a natural finish, plaster walls are sandfinished and painted rose beige; ceiling is the same color as walls, but lighter.

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES

Credits for all illustrations, pps. 61-80, appear on p. 118

by TURPIN C. BANNISTER*

IT IS a strange yet understandable paradox that American men and women, increasingly confronted by catastrophic world events, have experienced a resurgent interest in the origin, development, and present character of their own cultural tradition. In the field of architecture this new interest is evidenced both by a marked expansion in historical studies which are slowly disclosing the immensely significant American contributions to modern design and technique, and by a strong reaffirmation of those local preferences in materials, functional solutions, and aesthetic forms which express so vividly the rich variety of American regionalism.

In the past, extravagant enthusiasm for great historic buildings, newly revealed by archaeologist or art historian, has too often led architects to repeat superficial stylistic details in order to recapture antique vitality. Today, the modern architect, concerned with archaeological correctness chiefly when restoring some worthy historic monument, asks that architectural history perform the greatly expanded function of enriching his understanding of the many urgent contemporary problems facing him. He wants to know something of the evolution of various building types. He seeks acquaintance with the structural and aesthetic qualities of the several building materials and structural systems. He desires to investigate different methods of spatial organization and decorative media. He asks how outstanding architectural personalities of the past have approached the eternal problems of creative design and of practical construction.

It is, therefore, appropriate that the ARCHITECTURAL RECORD should signalize its half-century of chronicling American architecture by emphasizing again the absorbing story of growth and invention which carries us from conservative colonial craftsman to modern professional technician. Inaugurating a series which will ultimately focus on each region of the United States, the present survey of Northeastern states deals chiefly with the three great metropolitan centers, Boston, New York, and Philadelphia. Space permits citation of only those structures which symbolize outstanding architectural trends; but this should not be taken to indicate any lack of appreciation for many important architects and buildings, whether "fashionable" or "vernacular." Nor need momentary concentration in this region blind us to important contributions made in other areas.

Nevertheless, the remarkable role of the Northeastern States in the development of modern American architecture can hardly be over-emphasized. Here were established those theocratic colonists whose austere meetinghouses and spacious village greens still command our admiration. Here grew those teeming seaports whose merchant shippers filled their ample mansions with trophies of London and Hongkong. Here arose those busy mills to nurture Yankee ingenuity and impose an industrial economy over generations to come. Here, on the threshold of Europe, revolutionary ideas and ideals impinged, were experimented with, and were often translated into new and more practical forms. Here, a dense and varied population, a stimulating climate, rich resources, and youthful elan combined to produce that active, pragmatic, and restless individualism which so often typifies America.

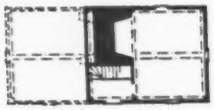
To summarize but a few contributions, New England can cite her system of timber framing, her public schools, her meetinghouses, her factories and their structural refinements to prevent loss by fire. New York pioneered in metal skeleton construction, in commercial structures, and in both urban and suburban housing. Philadelphia points with pride to her precocious leadership in civic and institutional building, to her imposing financial structures, and to a remarkable series of public works.

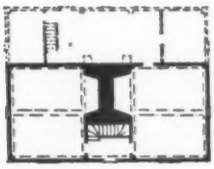
Thus the long record of architectural progress which our subsequent pages reveal can be evaluated only partially in terms of aesthetic style. Its most potent inspiration for the modern architect lies in a long record of energetic development of new structural materials, the solution of new functional types, and an amazing revolution in the construction process itself. Here it can claim a leadership second to none.

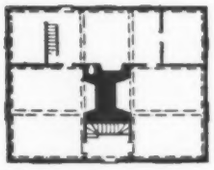
*In addition to being Associate Professor of Architecture at Rensselaer Polytechnic Institute, Mr. Bannister is editor of the new *Journal* of the American Institute of Architectural Historians

1620-1700 NEW ENGLAND. . . .

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES







(1) Plans show more comfort: one-room cottage; two-story, four-room house, then lean-to added

(2) "English wigwam," Salem, Mass. 1630 type reconstructed. Rush mats and bark-covered sapling skeleton

(3) Downing House, Salem, Mass. 1640. A unique survival of medieval England's picturesque carpentry

(4) Harvard College, 1638-42; reconstruction. First in an English colony, "too gorgeous for a Wilderness, yet too mean . . . for a College," its green timber soon decayed

(5) "Scotch" House, Saugus, Mass. Two-story front block built in 1651 for Cromwell's prisoners sent to work bog iron. Typical heavy-timber frame (6), brick-filled and clapboarded; framed overhang; pilastered chimney. Lean-to added later

PURITAN PRIMITIVE

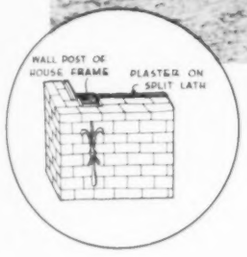
DESPITE inhospitable soil and climate, Pilgrim and Puritan soon demonstrated that relentless toil and perseverance could establish self-supporting communities in the new world. By 1640 the "great migration" of east-county dissenters, fleeing the onerous repressions of Charles I, contributed 16,000 to New England alone. By 1650 this region had over half of all American colonists, and out from the mother-towns of Plymouth, Salem, Boston spread compact villages, clearing new fields and erecting new democratic theocracies.

Soon small-scale agriculture was outranked by ship building, fishing, shipping, and trading. England, preoccupied with her own internal problems, exercised only nominal control until the independent temper of the colony, its flagrant disregard of maritime trade restrictions, and its persecution of Quakers and Anglicans, coupled with royal desire for administrative reorganization, led to resistance against the crown.

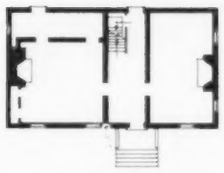
With forests everywhere at hand, it was to be expected that the first permanent dwellings, replacing the temporary "English wigwams," should be timber-framed following the late medieval tradition of East Anglia. Even east-county clapboards survived to shield soft-burned brick nogging from bitter winter frosts. Enormous fireplace-chimneys radiated warmth and served as anchors when Nor'easters blew.

Dominating village and green, a simple austere meetinghouse accommodated community activities until resources permitted the erection of church, town-hall, and school.

NEW NETHERLANDS



(7) "Watervliet," Van Rensselaer Manor House, Albany, N. Y., 1668. Typical Albany farmhouse — brick veneer held to timber frame by wrought-iron anchors (8), steep gable (dormers later), divided door, stoop, shutters, grain door to garret



(9) Typical four-bay farmhouse built 1723 by Jan Bries, SE of Albany. Original lean-to gone

(10) Dutch Reformed Church, Bergen, N. J., 1680. Windmill reduction of Renaissance central plans

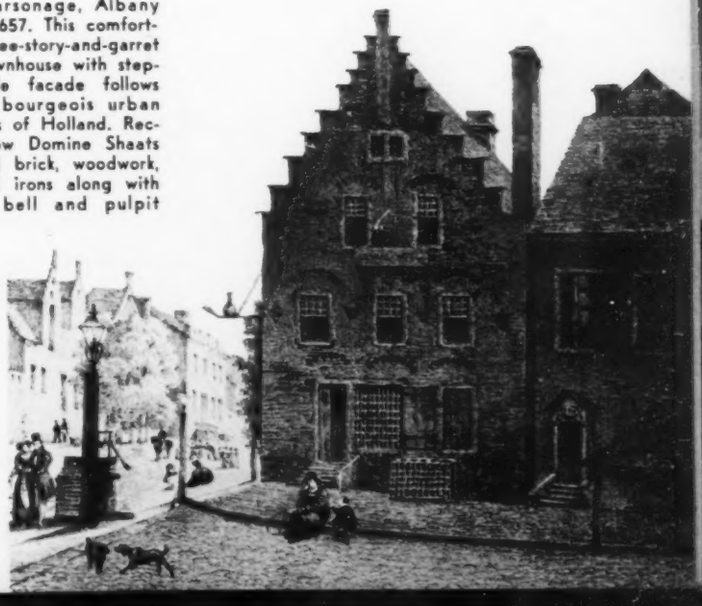
BURGERS AND PATROONS

In 1624 and 1625, the Dutch West India Company established Fort Orange (Albany) and New Amsterdam to tap the lucrative western fur trade. In contrast to New England settlements, these Dutch communities were slow to advance beyond the status of trading posts whose chief function was to supply directors with dividends. More enlightened was the policy of Kiliaen Van Rensselaer who in 1630 opened his enormous manor to colonists from many lands. Not until 1653 was a third settlement made at Wiltwyck (Kingston), followed in 1662 by Schenectady.

The inept administration of the West India Company, insisting on almost feudal tenure, imposing heavy taxes, and shirking all social responsibilities, alienated tenants, clergy and Van Rensselaers alike. When the British fleet appeared off New Amsterdam in 1664, Governor Stuyvesant could rally no resistance to oppose them. Wisely the English governors of New York won Dutch support by such respect for Dutch institutions, language and customs that these survived for generations.

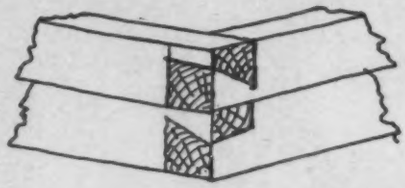
As in New England, Dutch builders used much hewn and sawed timber, framing their houses in a similar medieval manner. In early structures rough clapboards enclosed the wall; but soon kilns were opened, and the frames of town houses were covered with a type of brick veneer. Stepped gables, thatched roofs, wrought-iron beam anchors, and the inevitable entrance stoop completed their medieval flavor. Hardly any change followed British domination, and, indeed, the introduction of octagonal Reformed churches proved continuing Netherlandish influences.

(11) New Amsterdam, 1650. Within fort were stone church (1642), Governor's house, barracks, and jail. Modest brick houses face Strand with its wooden wharf and crane



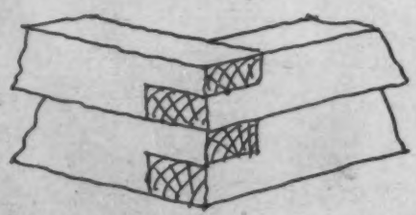
(12) Parsonage, Albany N. Y., 1657. This comfortable three-story-and-garret brick townhouse with stepped-gable facade follows closely bourgeois urban dwellings of Holland. Records show Domine Shaats imported brick, woodwork, tile, and irons along with church bell and pulpit

LOG CONSTRUCTION



IN NEW SWEDEN

(13, 14) Dominating the Delaware for 17 years (1638-55), Swedes built warm houses in their native log construction, which, spread along the forested frontier by Germans and Scotch-Irish, eventually became the log-cabin symbol of the American pioneer's self-reliance. To the 1654 one-room Mortonson House, Prospect Park (SW Philadelphia), a second was added in 1698 across an open "dog-run" (enclosed 1806). Fine-hewn four-inch planks needed no chinking

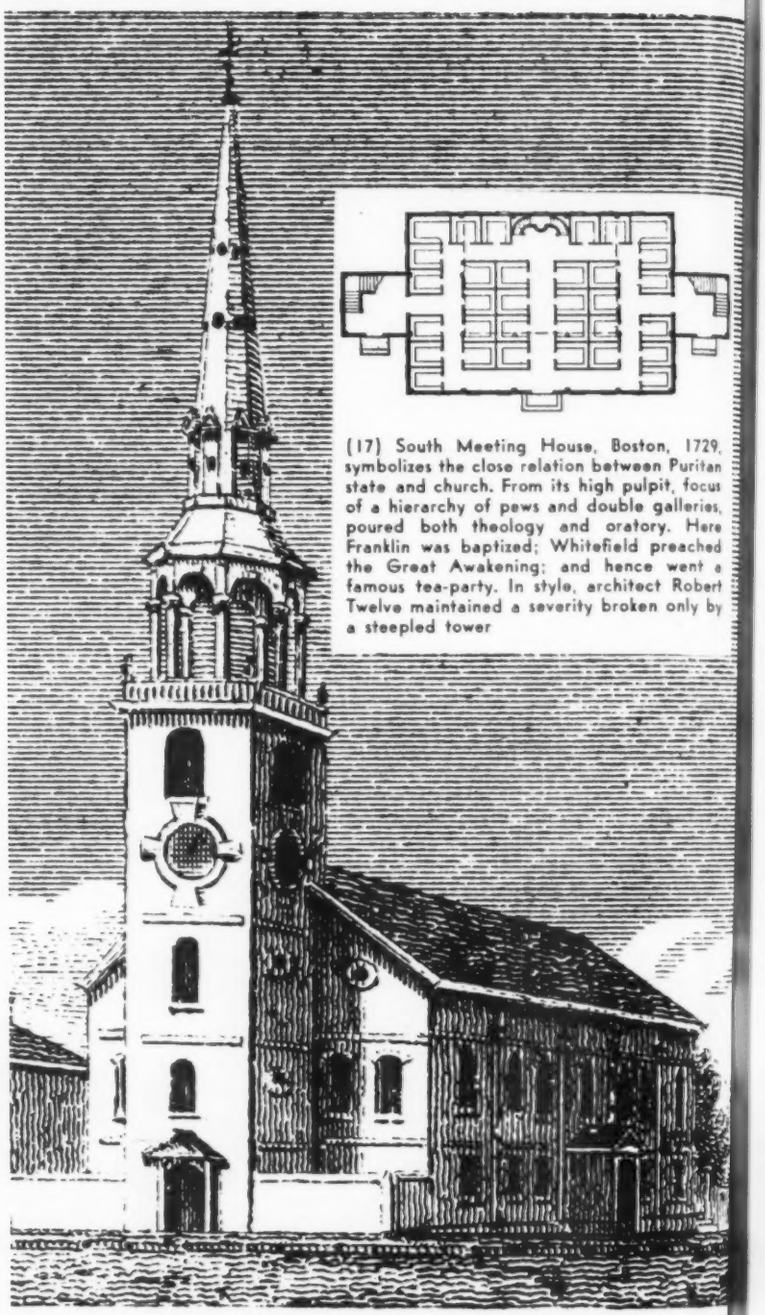


IN NEW ENGLAND

(15, 16) Throughout the colonies, and in New England especially during King Philip's War, stockaded blockhouses and garrison houses served as defense against attack, but only incidentally as dwellings. The William Damme Garrison House, Dover, N. H., built c. 1675, reveals typical massive walls of squared logs, halved at the corners, still unmasked by later shingles or clapboard. After 1690 in Maine and New Hampshire, log houses became common, and log jails appeared

ARCHITECTURAL DEVELOPMENT OF THE NORTHEASTERN STATES

1700-1780

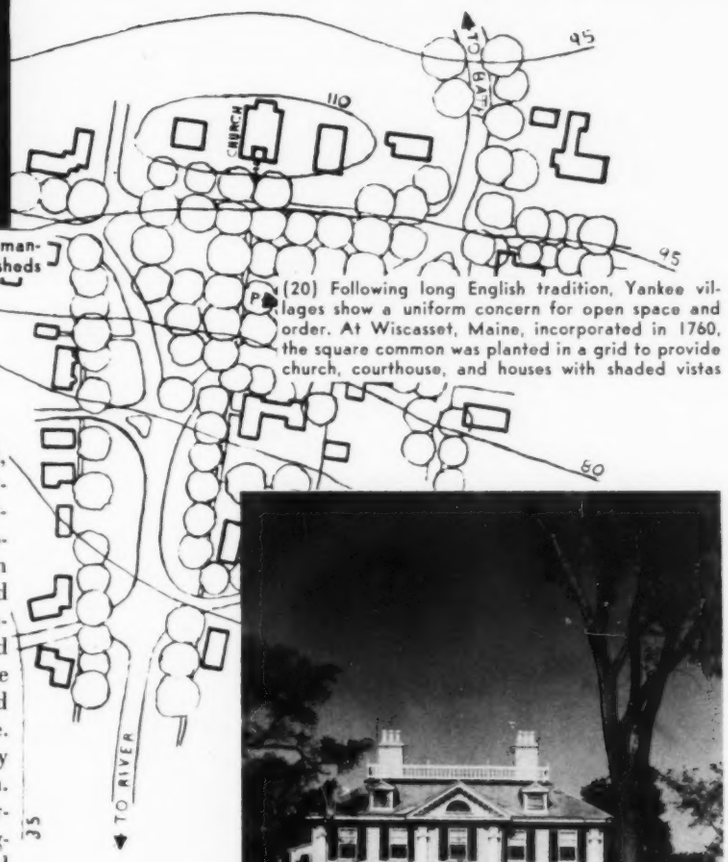


(17) South Meeting House, Boston, 1729, symbolizes the close relation between Puritan state and church. From its high pulpit, focus of a hierarchy of pews and double galleries, poured both theology and oratory. Here Franklin was baptized; Whitefield preached the Great Awakening; and hence went a famous tea-party. In style, architect Robert Twelve maintained a severity broken only by a steepled tower

(18) Jabez Wilder House, Hingham, Mass. Main block, 1690. Modest story-and-a-half type found in all colonies. Gable, gambrel, or nautical "rainbow" give roof interest

NEW ENGLAND

(19) Salem, Mass., about 1765. Prosperous new Georgian brick mansion beside early 18th century clapboarded courthouse and sheds



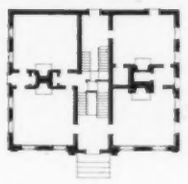
(20) Following long English tradition, Yankee villages show a uniform concern for open space and order. At Wiscasset, Maine, incorporated in 1760, the square common was planted in a grid to provide church, courthouse, and houses with shaded vistas

GEORGIAN YANKEES

FORCED by the lack of fertile soil, accessible markets, and staple produce to turn to the sea, Yankee merchants defied British restrictions to gain considerable profit transporting the products of other colonies, and developing the West Indian and African trade. Mercantile interests slowly transcended old religious isolationism. Jealous of any circumscription of their independence, the colonists blocked the royal governor at every turn; but not until the Franco-British Seven Years' War (1756-63) did England effectively restrain New England trade. This irreconcilable conflict of interests, climaxed by the Sugar and Stamp Acts, led directly to revolution.

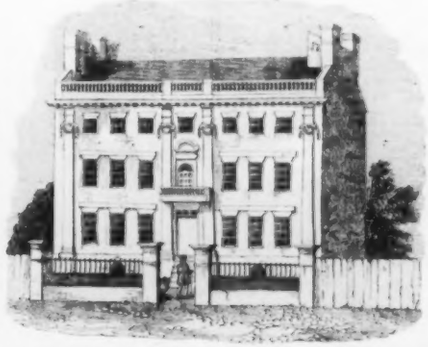
Architecturally, commercial prosperity encouraged the construction of more ample domestic, religious and public buildings. Although timber and clapboard continued to be the dominant material, brick occurred more and more frequently. Immigrant craftsmen trained abroad and local mechanics using illustrated builders' handbooks dressed these structures in the elegant costumes of Georgian London. When professional talent was wholly lacking, amateur designers applied the academic formulæ. At first, forms basically seventeenth century were simply overlaid with the new ornament; but gradually the whole structure was organized according to classical principles of geometric order, symmetry, gracious scale and dignified repose. Interior trim, stairs, and paneling were richly detailed and imported furnishings evidenced the rising standard of comfort.

(21) Major John Vassall House, Cambridge, Mass., 1759. Though structurally conservative, this spacious dwelling uses a full academic repertoire, shown in its pedimented projecting pavilion, rich cornice, Ionic pilasters, and hip-roof with balustraded deck



(22) Winslow House, Marshfield, Mass., 1699. Unpainted 17th century stylified by hip-roof, quoins and cornice

(23) Facade, Royall House, Medford, Mass., applied c. 1735 to Usher salt-box



(24) Hutchinson House, Boston, c. 1690. Academic brick facade with stone pilasters (added 1748?)

NEW YORK....

(25) St. Paul's Chapel, New York, 1764, James McBean, architect. Inspired by Gibbs' Georgian St. Martin's

(26) Johnson Hall, Johnstown, N. Y., 1761. Georgian home and stone blockhouse of Sir Wm. Johnson, a Royal Commissioner

(27) Abraham DePeyster House, Beacon, N. Y., c. 1750. Typical Dutch story-and-a-half in brick on stone basement. Georgian detail

(28) Hasbrouck and Frere Houses, New Paltz, N. Y., c. 1700. Two of the six typical Ulster County stone houses along Huguenot Street

(29) Market Street (Broadway), Albany, N. Y., in 1805. Half-Gothic Dutch shops and church (1714) elbow half-Georgian houses and market (1704)

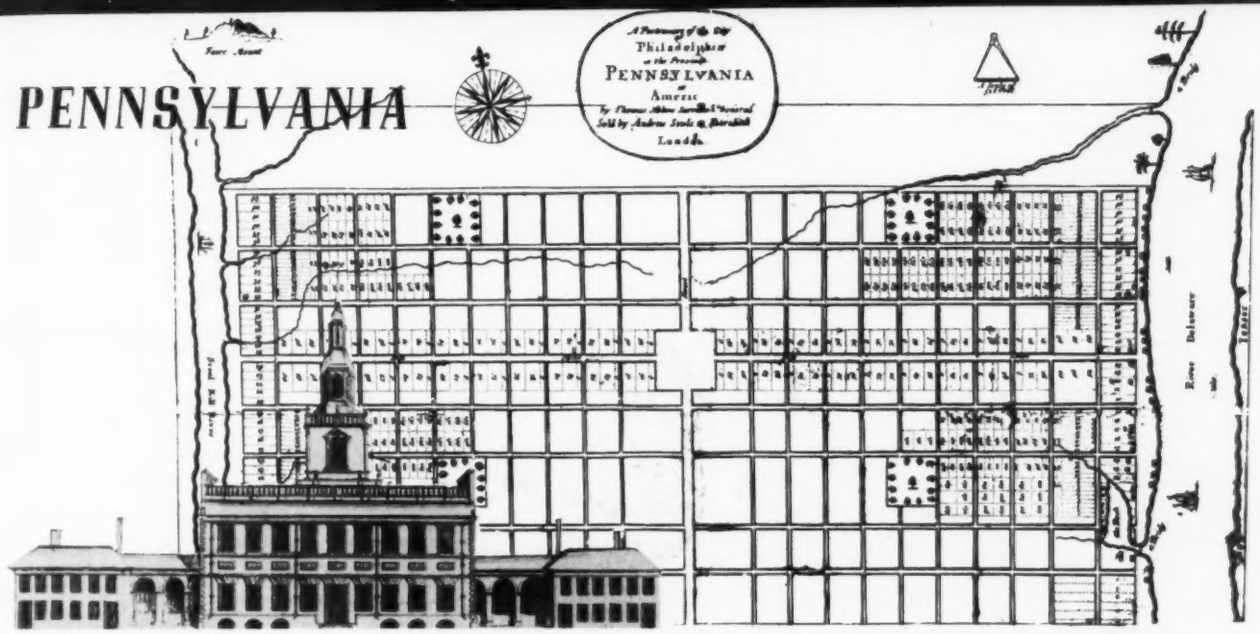
MERCHANTS AND MANOR LORDS

UNDER British administration, New York Dutchmen accomplished the agricultural conquest of the rich Hudson valley; but, in contrast to prosperous New England and Pennsylvania, progress was slower. The manorial system of leasing land did not attract new immigrants, nor did it foster independent industry. Iroquois resistance to encroachment, and threats of French attacks blocked northern and western expansion.

Dutch buildings up the Hudson were usually modest story-and-a-half cottages, a few of timber, some around Albany of brick, but most, in the middle reaches, of split stone. Prosperous farmers afforded larger quarters, two rooms deep, and in time adopted the English gambrel to reduce the resultant roof height. Some of their heavy-timbered barns with wagon doors in the gable end are still in use.

Georgian spaciousness and order arrived without delay in New York City; but in the valley they penetrated slowly and were largely confined to the few great manor houses of the landed proprietors. Paneling, hardware, and furnishings in some instances were direct importations. In turn, these stylistic pace makers occasionally inspired refinements of the common Dutch idiom with charming results both in domestic and religious structures. Palladianism, however, was almost wholly absent even in city churches, with the Jumel Mansion's two-story portico unique along the Atlantic seaboard.

(30, 31) Just after 1700, war, oppression, and bad harvests sent many continental immigrants to New York. Major John Schmidt's House, Germonds, 1735, with its Flemish "flying gutter," and the Palatine Lutheran Church, Caughnawaga (Fonda), 1763, form architectural evidence



(32) State House, Philadelphia, 1732-35. Edmund Woolley, chief carpenter and probable designer. An expanded palace inspired by Gibbs

(33) Penn's Plan, Philadelphia, 1682. Thomas Holme, surveyor. A very early comprehensive plan. Grid with five squares. Later modified

GOOD WORKS AMONG THE QUAKERS

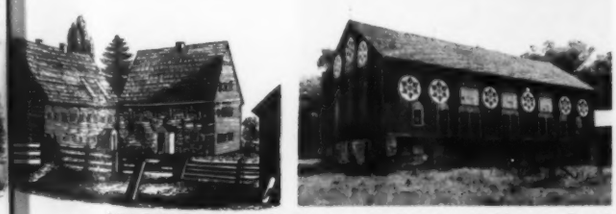
In 1664 the tiny Dutch and Swedish settlements along the Delaware surrendered, as had New Netherlands, to the deputy of James, Duke of York, brother of Charles II. Active colonization, however, awaited the transfer of the grant in 1681 to William Penn whose Frame of Government, guaranteeing religious and civil liberty, attracted many Quakers, Mennonites, Dunkards, Moravians, Scotch-Irish, and Huguenots. Security and tolerance fostered commerce and production, and Philadelphia soon became the largest and richest community in the colonies. The strong religious and humanitarian character of its population gave the city outstanding leadership in institutional and philanthropic activities.

Pennsylvania's early buildings reflect its late start. No Tudor element survived. Queen Anne's sturdy simplicity dominated their brick exteriors, relieved by painted trim and shutters. In Germantown, German fondness for stone masonry and window hoods is noticeable. In the twenties, the Georges' greater elegance appeared promptly to inspire State House, municipal and institutional structures, churches, and the expansive mansions of Quaker merchants and Philadelphia lawyers. Nowhere were Palladian precepts more thoroughly applied than in these stately central blocks flanked by secondary projecting wings.

(34) City Almshouse and Hospital, Philadelphia, 1760-67. Here, humanitarian institutions cared for old, poor, sick, orphans, insane

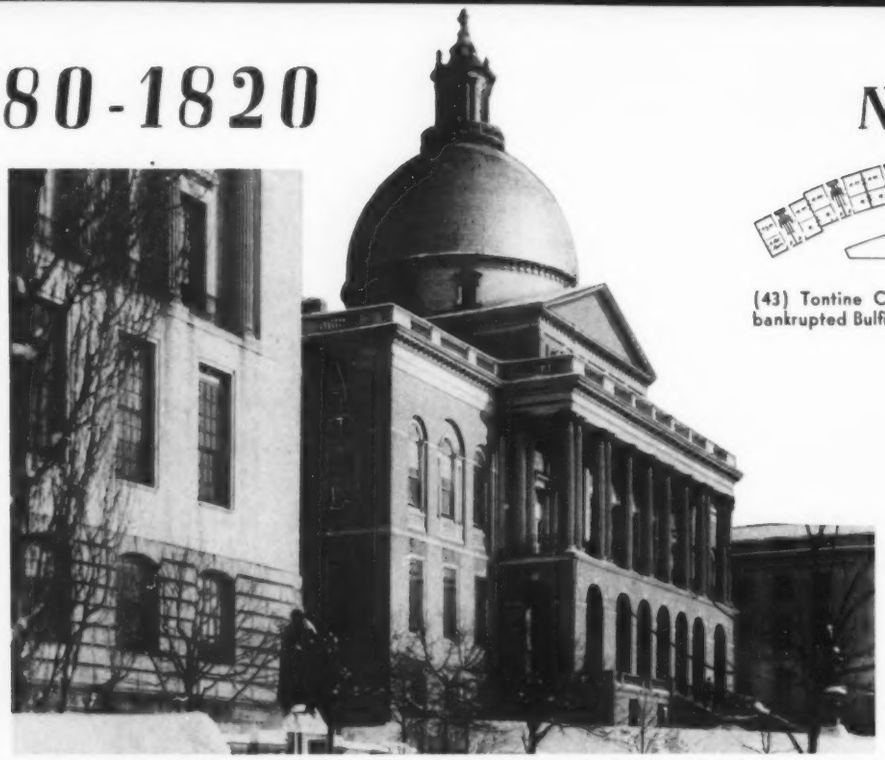
(35) Mt. Pleasant, Philadelphia, 1762. John Adams called Privateer MacPherson's home "the most elegant seat in Pennsylvania"

(36) "Amstel" House, Newcastle, Del., c. 1728. Quaker Georgian, with pedimented gable and robust doorway



(37, 38) Seekers of religious and political liberty, Dutch Mennonites built massive barns with decorative "hexenfoos," and German Seventh-day Baptists housed their ascetic Society of the Solitary in Ephrata's wooden cloisters — the 1741 Saal (House of Prayer) and 1743 Sharon (Sister House)

1780-1820 NEW ENGLAND



(39) State House, Boston, 1795-1802. Inspired by Chambers and Gabriel, Bulfinch adapted "late Colonial" to a broader scale suitable for public work

(40) John Gardner House, Salem, Mass., 1805. Here, McIntire solved a townhouse problem with comfort, convenience, and elegant restraint

(41) Samuel Slater's Spinning Mill, Pawtucket, R. I.; center portion, 1793. Here water-powered machines began American mass-production

(42) Neat rows of modest cottages attracted operatives to early spinning mills along Rhode Island streams. These were at Fiskeville

(43) Tontine Crescent, Boston, 1793, a speculation that bankrupted Bulfinch and turned him to professional practice

(44) Gore Place, Waltham, Mass., 1804. Lucid, orderly, neo-classic geometry

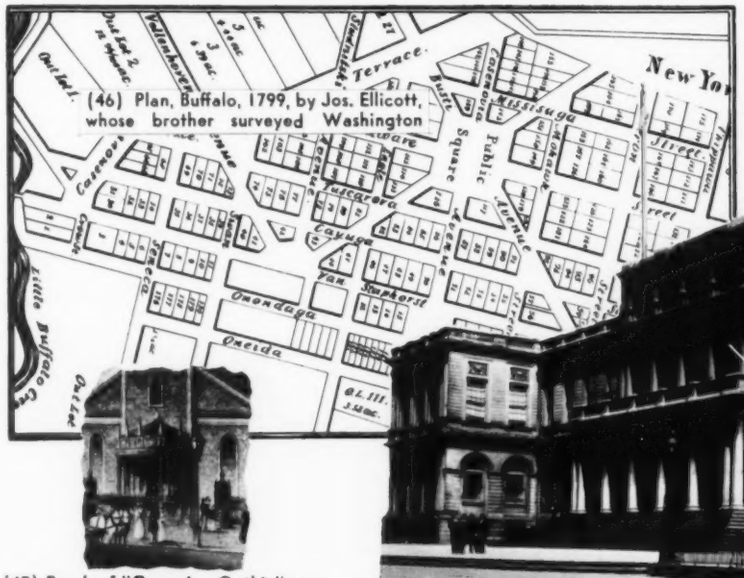
(45) Capital, from Asher Benjamin's "Country Builder's Assistant," 1796

POST-COLONIAL CLIPPERS

ALTHOUGH YANKEE SHIPPING suffered severely during the Revolution, the British blockade encouraged the establishment of numerous small industries and, for a time, revivified local agriculture. With cessation of hostilities, New England sloops, denied British-controlled ports, sailed to the Orient to win fabulous profits. Fishing revived; systematic whaling was begun. But in 1807, Jefferson's embargo interrupted this prosperity. Yankee ingenuity and capital again turned to industry. In 1814 Francis Cabot Lowell revolutionized the textile industry by introducing his power loom and by organizing, for the first time, all cloth-making processes within one mill. Fostered by tariff protection after 1816, new mills sprang up wherever water power could be developed, Rural New Englanders, dissatisfied with meager agricultural returns, more and more sought steady wages in bustling seaport or orderly mill town, or escaped to the newly opened promised lands of the Genesee and Western Reserve.

In architectural style, post-revolutionary New England at first continued to follow colonial Georgian tradition. Prosperous merchants, however, soon demanded more spacious town houses, larger and more dignified churches, and more monumental civic buildings. These conformed in detail to the latest Adam delicacies or Soane abstractions, which were ably interpreted by MacIntire, Salem's carver-architect, or that amateur-professional, Bulfinch of Beacon Hill. The new paradigms, publicized by Asher Benjamin's numerous editions, reappeared in many charming provincial variations along the Connecticut, in the Berkshires, and wherever Yankee builders emigrated.

. . . NEW YORK



(46) Plan, Buffalo, 1799, by Jos. Ellicott, whose brother surveyed Washington

(47) Porch of "Georgian Gothic" second Trinity Church, New York, 1787-90

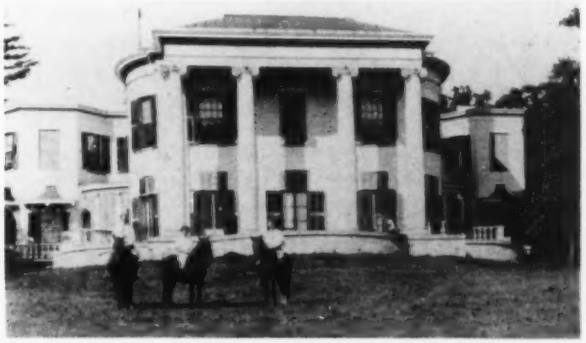
(48) City Hall, New York, 1803-11, owes its Louis XVI grace to emigré-architect Joseph Mangin, despite claims of McComb, who supervised construction

THE HARBOR AWAKENED

THE SUCCESSFUL CONCLUSION of the Revolution opened up-state New York to land-speculators and the great migration of New Englanders. Bustling Yankee villages startled Hudson River Dutchmen or served as mileposts along western turnpikes. At Hudson, Rensselaerville, Skaneateles, and Canandaigua, Yankee craftsmen re-created their accustomed late-Georgian forms, and under Philip Hooker even solid Dutch Albany received a transformation worthy of its new status as state capital.

New York City, largest city of the republic and for a time its capital, continued its commercial expansion interrupted only by the War of 1812. Economic prosperity revitalized both public and private building which gradually modified the colonial tradition by reflecting English neo-classicism. Cordial relations with France and the subsequent arrival of emigré architects introduced a strong continental influence.

Prompted by manorial aspirations and yellow-fever epidemics, many wealthy New York merchants acquired lordly summer villas along the middle Hudson. To maintain prestige and share new standards of comfort, the great proprietors felt obliged to remodel or replace outmoded manor houses. That prosperity penetrated even more modest homes was revealed both in town and country, by more commodious quarters, higher ceilings, stylish trim, and the increasing use of brick.



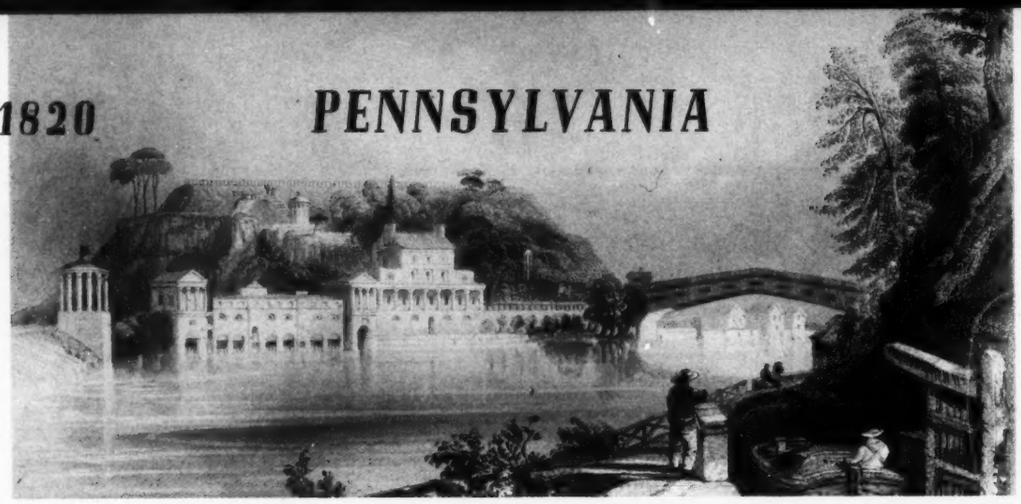
(49) The Hill, near Hudson, N. Y., c. 1796. The stately portico of this Livingston home masks a pair of juxtaposed elliptical salons

(50) Nathan Roberts House, Canastota, N. Y., 1820. An Adamesque arcade marks this post-Colonial home of a canal engineer

(51) Union College, Schenectady, N. Y., 1813. French "grand plan" with academic enframement of neo-classic Pantheon, designed by emigré Joseph Jacques Ramee

1780-1820 PENNSYLVANIA

(52) 142-foot brick shot tower, 1807—first in U. S.



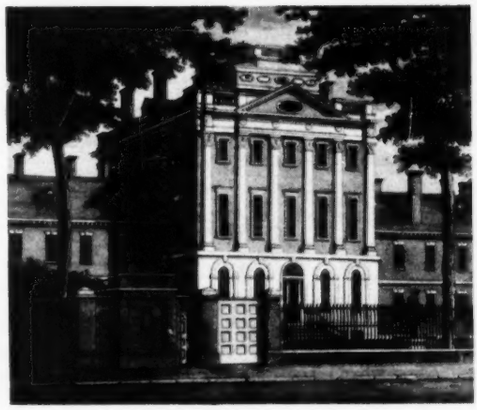
(53) Wernwag's 340-foot Schuylkill Bridge (1812), Graff's Fairmount Waterworks (1819-22), and the Canal (1825)

BANKING AND POLITICS

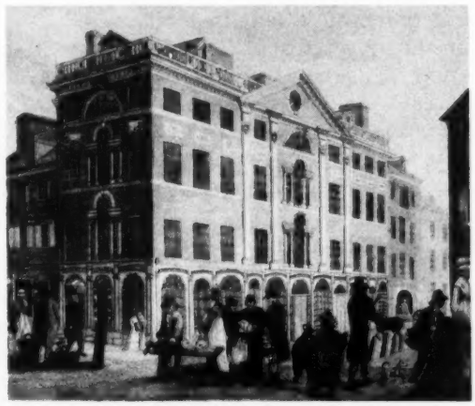
THE SOLID BASIS of commerce, industry, and finance which had given Philadelphia such an outstanding role in the revolution, continued to sustain its leadership during the early republic. Although New York was now the metropolis, and although Washington became the political capital in 1800, Philadelphia long remained the national banking capital. Economic political and cultural attractions, symbolized in the career of Stephen Girard, doubled state population by 1820. Settlement of central and western Pennsylvania began in earnest, focusing attention on river and turnpike development, and encouraging exploitation of the vast deposits of coal and iron.

It is not surprising that Philadelphia, the wealthiest city of the new nation, carried out a series of unprecedented public works, including bridges, water works, hospitals, almshouses, and asylums. A new elegance replaced colonial Quaker severity. L'Enfant's marble facade brought Robert Morris to bankruptcy; but this rich material before long decorated the stoops and strings of even middle-class row houses. Opportunity for commissions drew to the metropolis accomplished architects like Latrobe, who introduced the latest stylistic fashions of Europe —Neo-Classic, Greek, and Gothic. Under him developed the apprentices, Strickland and Graff, the first of Philadelphia's famous line of professional architects and engineers.

(54) President's House, Philadelphia, 1792-97. Pennsylvanian architectural bait to obtain the Federal capital

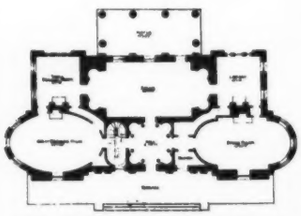


(55) Central block, Pennsylvania Hospital, Philadelphia, added 1800-05. Samuel Rhoads was the architect



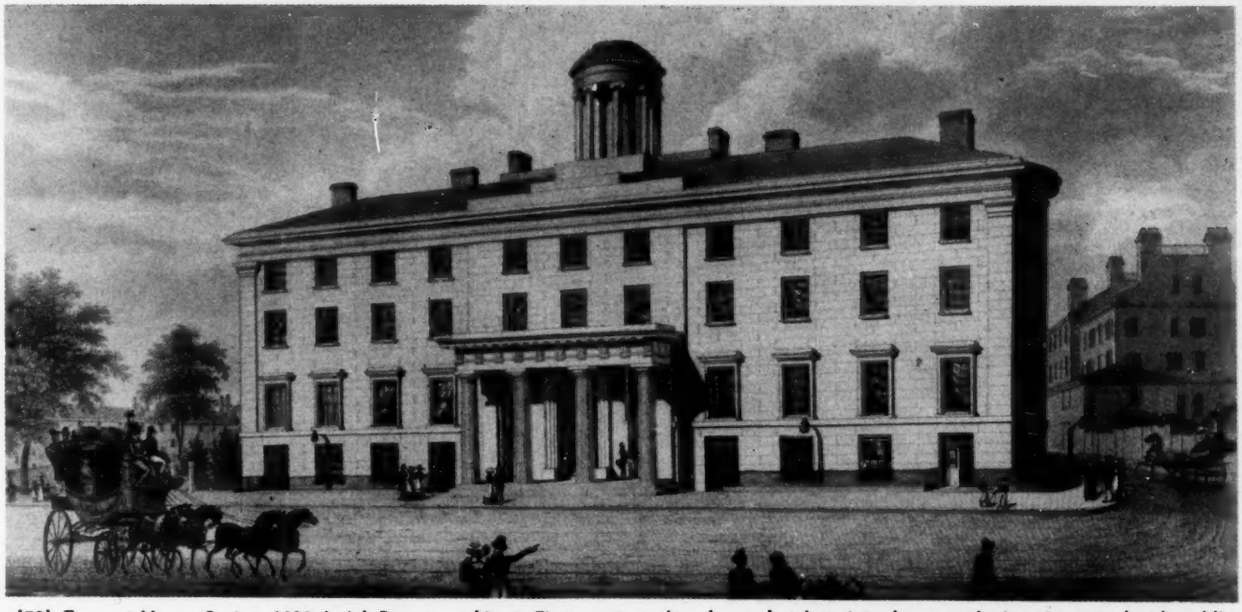
(56) Cooke's Folly, Philadelphia, 1796. This ostentatious pile of shops and dwellings broke its promoter

(58) Latrobe's Waterworks, Philadelphia, 1799. Frail wooden boilers and pipes distributed Schuylkill germs

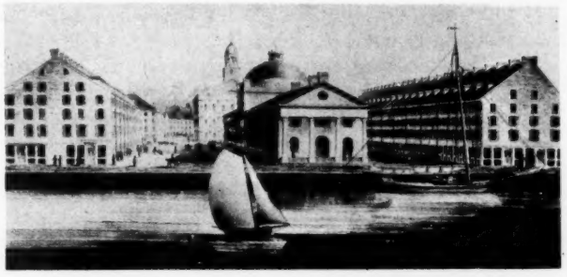


(57) William Hamilton's Woodlands, Philadelphia, neo-classized in 1788 by ovals, niches and a portico

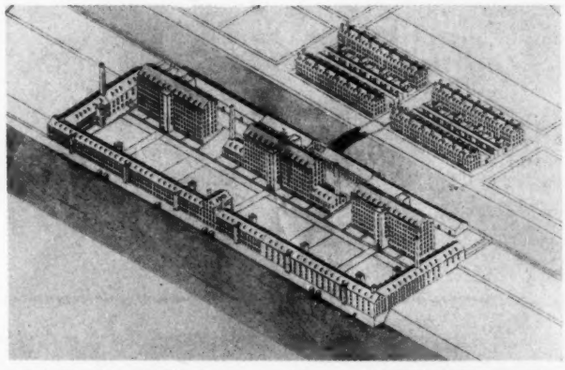
1820-1860 NEW ENGLAND



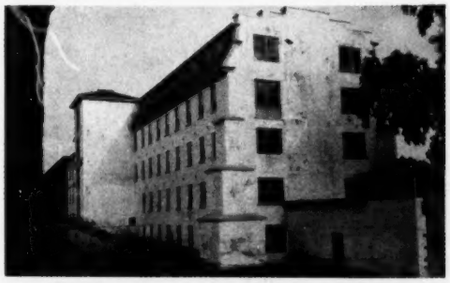
(59) Tremont House, Boston, 1828, Isaiah Rogers, architect. First great modern luxury hotel to introduce rough Americans to lavish public rooms, ingratiating service, room-suites, and elaborate mechanical equipment. Renown led to one of first nation-wide architectural practices



(60) Quincy Market, Boston, 1825, by Parris. Stalls below, exhibit hall above. Granite Greek revival. Part of $1,000,000 job



(61) Bay State Mills, Lawrence, Mass., mid 1840's. Mill, counting house, and paternalistic housing in momentary equilibrium



(62) Woolen Mill, Allendale, R. I., 1822, by Zachariah Allen, U. S. pioneer in industrial fire prevention

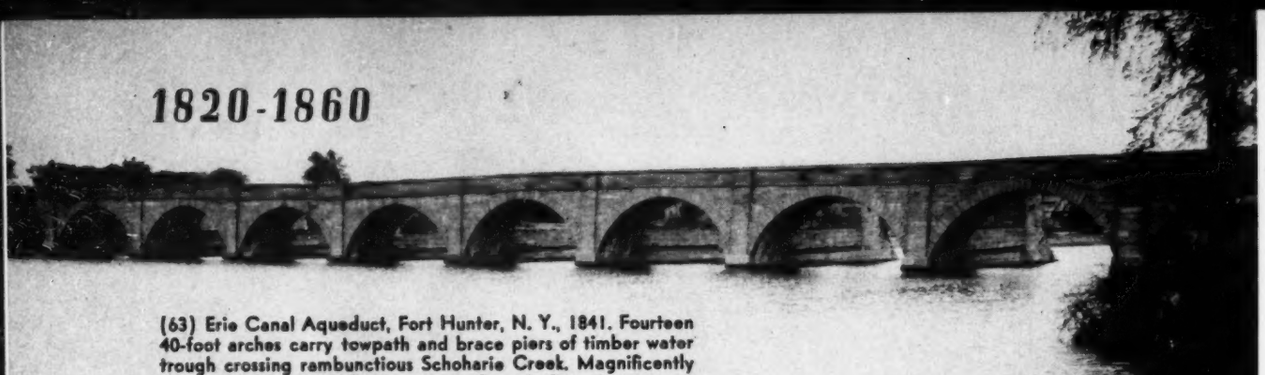
CULTURE AND COTTON MILLS

ALTHOUGH THE TURNPIKE and canal mania passed New England by, the arrival of cheap western wheat on the eastern seaboard spelled the abandonment of many submarginal New England farms. Commerce and industry henceforth dominated Yankee economy. Nantucket and New Bedford whalers hunted two oceans to light the nation's lamps. Sleek Yankee clippers outsailed all rivals on the seven seas. Factories continued to multiply and diversify.

The impact of this industrial revolution reverberated in every phase of life. To stem the alarming exodus to western lands, sweeping political and religious reforms were enacted. Labor legislation sought to minimize industrial exploitation. In the social ferment of the thirties, arose the Humanitarian movement, the crusade for temperance and abolitionism, transcendentalism, utopian communism, and universal education. In the forties and fifties, the Irish invasion added another element of confusion.

These economic and cultural transformations inevitably posed many architectural problems. The increased fire hazards of mill and warehouse provoked the first steps toward a comprehensive program of fire-loss prevention. The promotion of large industrial enterprises compelled attention to employee housing. Growing metropolises demanded more adequate architectural equipment.

Although New England employed the fashionable stylistic revivals of the day — Greek, Gothic, and Renaissance — as effectively as elsewhere, an incipient architectural rationalism was voiced by Thoreau and Emerson.



(63) Erie Canal Aqueduct, Fort Hunter, N. Y., 1841. Fourteen 40-foot arches carry towpath and brace piers of timber water trough crossing rambunctious Schoharie Creek. Magnificently severe cut-limestone forms suggest Soane's Boeotian manner

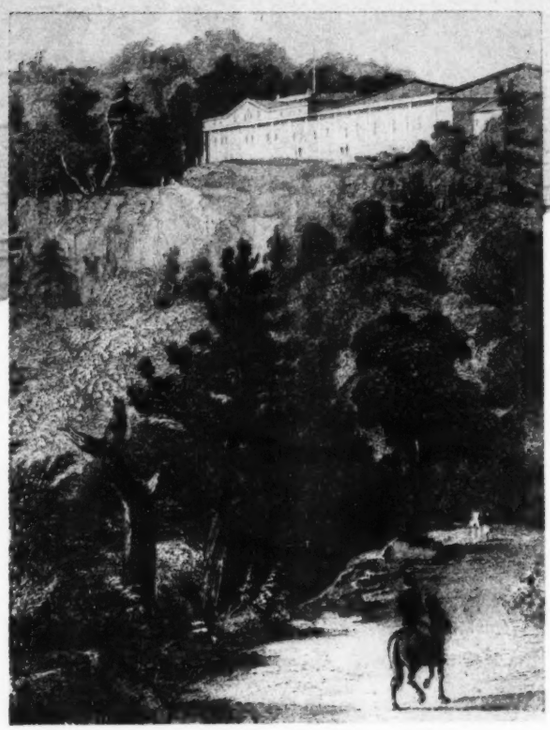
LAKE ERIE MEETS THE S...

WITH THE COMPLETION of the Erie Canal in 1825, the Empire State became the high road and New York City the seaboard outlet of western trade which permanently assured their pre-eminent position in the national economy. To equip the agricultural frontier, eastern market towns turned more and more to heavy industry and soon rivaled the mills of New England and Pennsylvania.

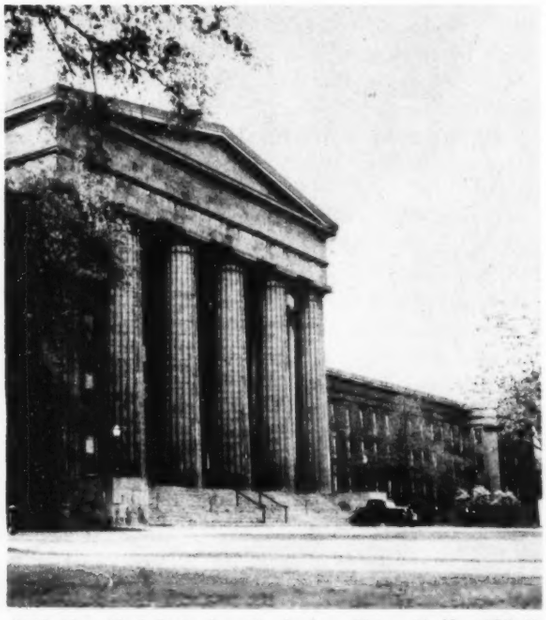
In the excitement of the new era, New Yorkers adopted without reservation both the crisp perfections of the Greek revival and the sentimental picturesqueness of the Gothic. Whether of Sing-Sing marble, Trenton limestone, stucco, brick, or Adirondack timber, the full panoply of these rich historic vocabularies was applied in greater or less degree and with increasing archaeological accuracy to every building type.

The booming forties saw great canal extension and enlargement despite incipient railroad competition. Disastrous New York conflagrations provoked magnificent engineering achievements: the Croton aqueduct, High Bridge, and Bogardus' early experiments with cast-iron building construction. The exuberant enrichment which this facile plastic material encouraged dispelled the growing boredom felt for pure, but monotonous, neoclassic surfaces.

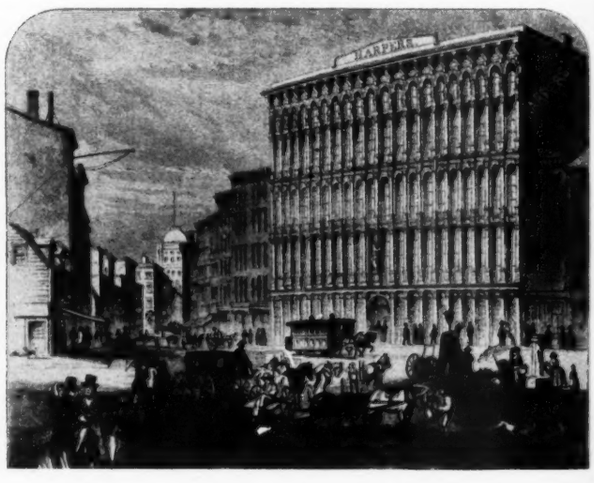
No less important for modern architecture were mechanical developments — central heating, water supply, plumbing, gas lighting, ventilation, and elevators. In the field of city planning, the problem of low-cost housing was accentuated by the influx of Irish and German immigrants, creating congestion which led to the public park movement and the escape of upper-class commuters to suburban havens.



(64) Catskill Mountain House, 1823, marked emerging interest of Americans in recreation and romantic landscapes

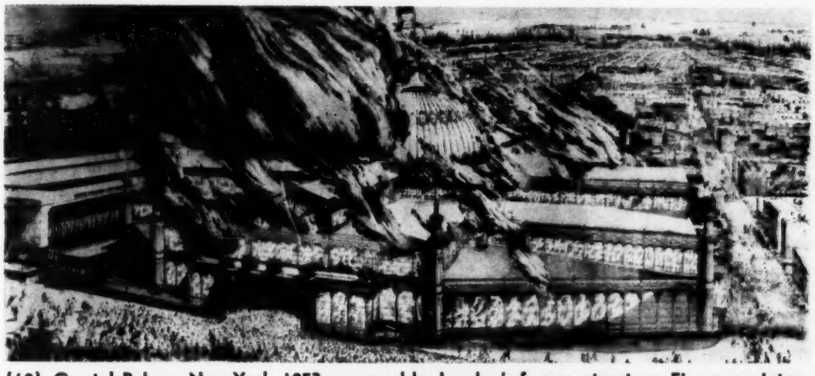


(65) New York State Lunatic Asylum, Utica, N. Y., 1839-42. Superb 48-foot-high Greek Doric portico accents severe 550-ft. facade. Provided for patient classification, therapeutic work



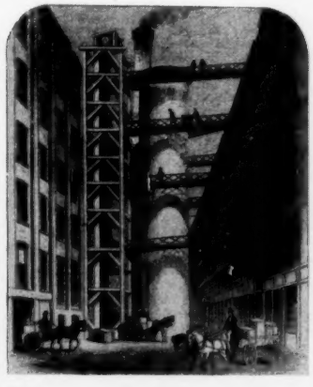
NEW YORK

(67) Central Park, New York. Gourlay proposed parks, 1844, backed by Bryant and Irving; A. J. Downing urged this site, 1850; designed and built, 1858-76, by Olmstead and Vaux, influenced by Haussmann's Parisian promenade parks. Success inaugurated American park movement and led to modern city planning

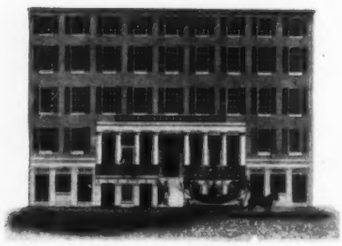


(68) Crystal Palace, New York, 1853, spawned by London's famous structure. Five years later, fire proved in 20 minutes that unprotected iron and glass alone could not prevent destruction

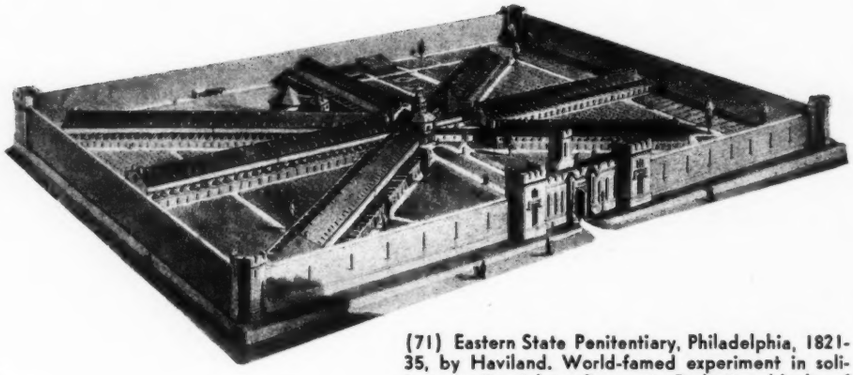
(69) A more authentic Gothic spirit emerged in Richard Upjohn's third Trinity Church, New York, 1838-46. Soon the "Christian style" replaced pagan Greek



(66) Harper Bros. Plant, New York, 1854, Corlies, architect. After costly fire, Harpers, largest U. S. publishers, demanded maximum fire resistance — incombustible structure of cast-iron columns and girders, rolled wrought-iron beams (first in U. S.), brick floor arches, and a Bogardus iron front; interiors subdivided by fire walls; stair, hoist, and boilers in court



(70) Third Street Hall, 1833, hotel and first Pennsylvania R. R. terminus



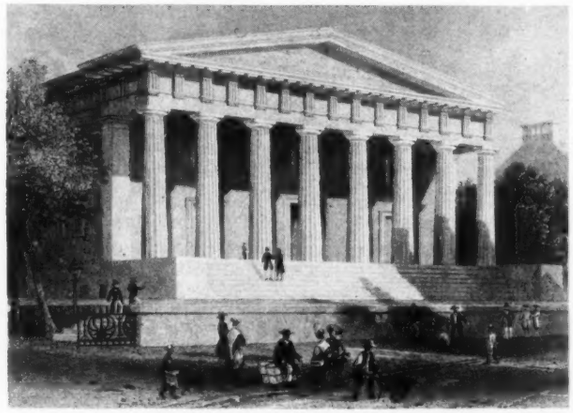
(71) Eastern State Penitentiary, Philadelphia, 1821-35, by Haviland. World-famed experiment in solitary penitential confinement. Radiating blocks of 8 x 12 ft. barrel-vaulted cells behind a Castellated Gothic wall, "impressive, solemn, and instructive"

CROSSING THE ALLEGEHENIES

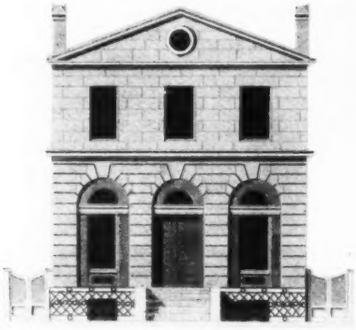
WHEN TURNPIKES proved an inadequate link with central and western Pennsylvania, Philadelphia's capitalists and engineers began the construction of canals up Schuylkill, Susquehanna, and Juniata. Soon this growing network, fed by tiny gravity railways, carried the state's enormous mineral wealth to eastern markets. Steam locomotion encouraged the addition of longer tracks, until Erie Canal competition finally forced an ingenious co-ordination of railroad, canal, river, and inclined plane reaching clear to Pittsburgh. By 1852, through rails connected east and west.

The growth of industry was no less dramatic. Cast iron production expanded at Pittsburgh and Danville; in 1854 rolled wrought iron beams came from Trenton; in 1855, steel rails were rolled at Johnstown's Cambria Works. Typical of the development of heavy industry was the Baldwin Locomotive Works, established in 1831.

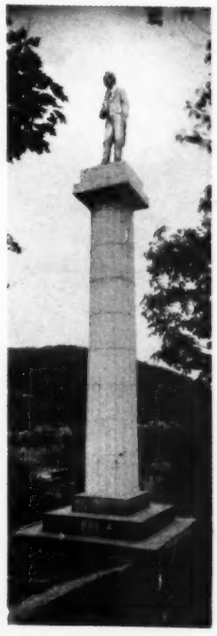
In architecture, liberal resources and enlightened patronage provided the opportunity for Strickland, Haviland and Walter to set a standard in excellence of construction and style which made Philadelphia the nation's architectural capital. In prison design, Haviland was world-renowned. Latrobe and Strickland propagated the Greek Revival. Prophetic, too, was the establishment in 1831 of the first United States building-and-loan association, an idea now phenomenally represented in Philadelphia by more than 7,000 units, and accounting in large part for the unusually high proportion of home ownership.



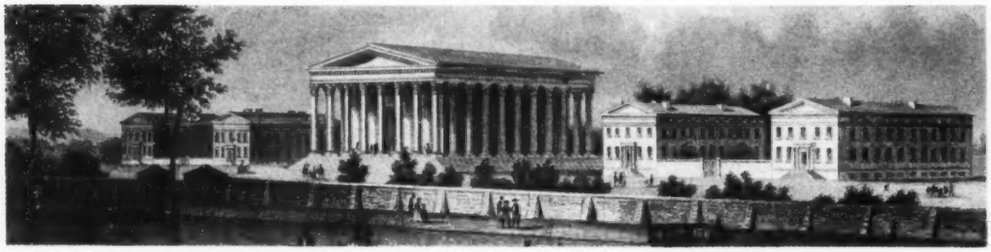
(72) Bank of the U. S., Philadelphia, 1817-24, Latrobe and Strickland. Federal finance and Greek portico sanction one another



(73) First U. S. cast iron facade. Bank, Pottsville, 1830, Haviland



(75) Pottsville's cast iron column (1855) to Henry Clay who won tariff protection for local coal



(74) Founder's Hall, Girard College, Philadelphia, 1833-47, by Thos. U. Walter. Superb Greek Corinthian colonnade

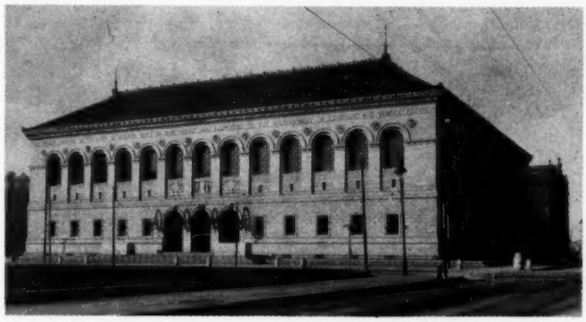
1860-1920 NEW ENGLAND

(79) R. M. Copeland's City Plan (first U. S. use of term) for Boston, 1872, almost regional in scope, preached necessity of creative control of urban growth

(76) City Hall, Boston, 1862-65, Bryant and Gilman. Yankee Louvre

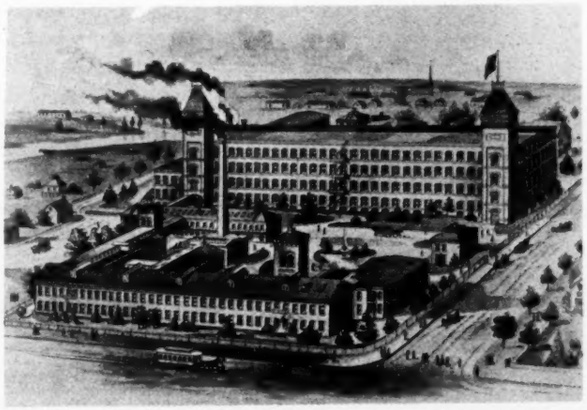
(77) Harvard's Memorial Hall, 1871-74, Ware and Van Brunt. Victorian "civic" Gothic

(78) Trinity Episcopal Church, Boston, 1872-77. It established "Richardsonian" as the style of two decades



(80) Boston Public Library, 1888-95, McKim, Mead, and White. Palace to Yankee faith in knowledge inspired second classic era

(81) English-High and Latin School, Boston, 1877, G. A. Clough, architect. World's largest free public school used a "German" plan



(82) Steam Cotton Mill, Pawtucket, 1881. Heavy-timber "mill construction," flat roof, electric light, humidified and sprinklered

EMPIRE STATE COMES OF AGE

In the aftermath of Civil War, New England underwent further industrialization. Driven from the seas by the inexorable iron steamers of the British fleet, and robbed of their whale oil market by the discovery of petroleum, maritime capital turned again to industry and transportation. Steam-powered railroads hauled Pennsylvania coal to the new steam-powered urban mills. Wholesale immigration solved the problem of cheap labor, but accentuated already increasing urban congestion.

Widespread factory construction focused further attention on planning for productive efficiency and prevention of fire loss. Extraordinary success in the latter led, especially after the Boston fire of 1872, to similar precautions in every type of modern building.

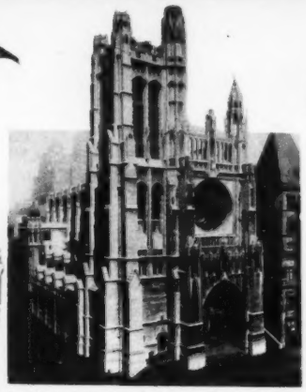
Urbanization evoked many instructive projects. Boston's reclamation of the Back Bay swamps which blocked southward expansion, her establishment of a comprehensive system of metropolitan parks, and her magnificent Charles River development were symptomatic. The achievement of Copley Square and its legal protection were landmarks in American city planning.

In stylistic matters, Boston continued her leadership. Mansarded French Renaissance, polychromatic Ruskinian Gothic, massive Richardsonian Romanesque, and Crammian medievalism were Boston's contribution to national eclecticism. In 1866, William R. Ware established at M.I.T. the Ecole-inspired curriculum of America's first architectural school, a filiation further signalized in the translation by Henry Van Brunt, Ware's partner, of Viollet-le-Duc's prophetic "Discourses on Architecture."

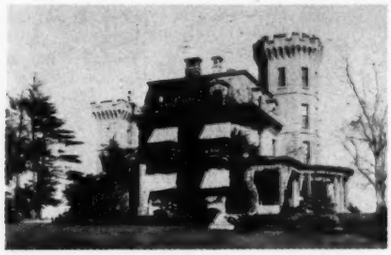
1860-1920 NEW YORK ....

(83) Equitable Life Offices, New York, 1870, Gilman and Kendall. First office elevators

(84) Singer Building, New York, 1908, by Ernest Flagg. "Beaux-Arts Baroque" hid this skyscraper's technical progressiveness

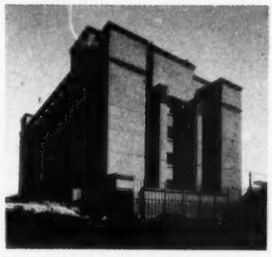


(88) St. Thomas', New York, 1906-13. Goodhue Gothic at its best



(89) Concrete Ward House, Portchester, N. Y., 1875, used 4,000 bbl. of English cement

(90) State Education Building, Albany, 1912, Palmer, Hornbostel and Jones



(91) Wright's trail-blazing Larkin Co. Offices, Buffalo, 1904

(85) Forest Hills, Long Island, 1911, Olmstead and Atterbury

(86) New York's old law fire-traps blight tenant and owner

(87) Alfred T. White's Home Buildings, Brooklyn, 1876-79, Field and Son, architects. First block of "model tenements" in greater New York

EMPIRE STATE COMES OF AGE

NEW YORK, stimulated to extraordinary effort to supply the needs of northern armies, emerged from hostilities with all the paraphernalia of modern mass production — power machinery, wage, labor, and corporate management. Captains of industry, impatient with mule-paced barges on state-owned canals, shifted their patronage to newly integrated railroad systems, symbols of dizzy speed, ruthless power, and clever finance. The tumultuous metropolis now became hemispheric capital of finance and commerce.

As the century waned, heavy industry moved west to develop Lake Superior ore and follow agricultural and railroad markets. Exhaustion of Adirondack forests closed Albany's 4,000 sawmills. In consequence, New York State enterprise turned to dairying, orchards, and such specialized industrial products as electrical wares, clothing, and photographic apparatus.

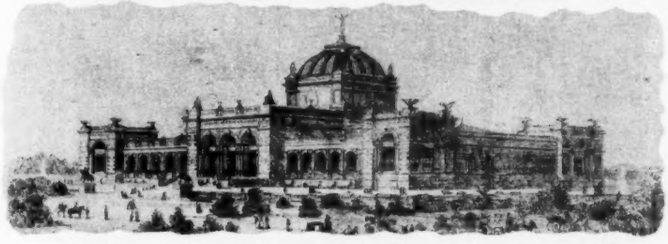
From 1865 to 1914, it is amusing to note how closely stylistic fashions correlated with building booms and Wall Street peaks. Despite the risk of oversimplification, the cast-iron Folk-Baroque and the Victorianated Gothic of General Grant, the brownstone and granite Romanesque accompanying Gold Resumption, and the imperial New-Classicism of Corporation Prosperity seem more than casual coincidents. Of serious import, however, was the refinement of fire-resistant structural systems, the perfecting of mechanical and electrical equipment, and steady improvement in craftsmanship and constructional organization.

PENNSYLVANIA

(92) "Main-line" villa, 1869, of Penn R. R. Vice-Pres. Alex. J. Cassatt, at Bryn Mawr

(93) Pennsylvania's Broad St. Station, 1880-94, Furness & Evans; head office and world's largest terminal

(94) City Hall, Philadelphia, 1874-87, by John MacArthur. Civic ambition overwhelmed Penn's Square



(95) Centennial, Philadelphia, 1876. Above, 21-acre Industrial Hall by Pettit and Wilson; below, Gallery of Fine Arts, by Schwarzmann

COAL, STEEL, AND TRANSPORTATION

IN SPITE of the loss of southern markets, Pennsylvanian industry emerged from the Civil War greatly stimulated. Using experience obtained as chief of transportation for the Union army, Thomas Scott integrated various independent railroads into a unified Pennsylvania system. A. J. Cassatt, his assistant and successor, carried through tremendous physical improvements in trackage, terminals, and equipment. Another assistant, Andrew Carnegie, began by rebuilding timber railroad bridges in steel and ended by controlling a vast industrial empire.

With continued growth due to consolidation, immigration, and increasing trade, Philadelphia entered the lush seventies. Symbolically, July 4, 1874 saw the beginning of both an ostentatious City Hall and the 180 overripe extravaganzas of the Centennial Exposition. Sprawling, middle class residential expansion to south and west followed the introduction of rapid transit, and paralleled upper class flight to suburban estates along the Main-Line.

Although the appearance, in 1868, of America's first architectural magazine indicated a sustained professional vitality, Pennsylvania architects did not escape the current eclecticism. Attested by Louis Sullivan's youthful enthusiasm, a few, like Frank Furness, achieved, within a fashionable vocabulary, powerful and individual building. Symptomatic of the century's turn, many major commissions went to nationally known firms outside the boundaries of the state, for example, Richardson's Allegheny County Courthouse, McKim's Girard Trust, Hornbostle's Carnegie Institute, and Brunner's Harrisburg group. The nation-wide distribution and architectural use of Pittsburgh steel and Lehigh cement created a similar trend in the structural field.

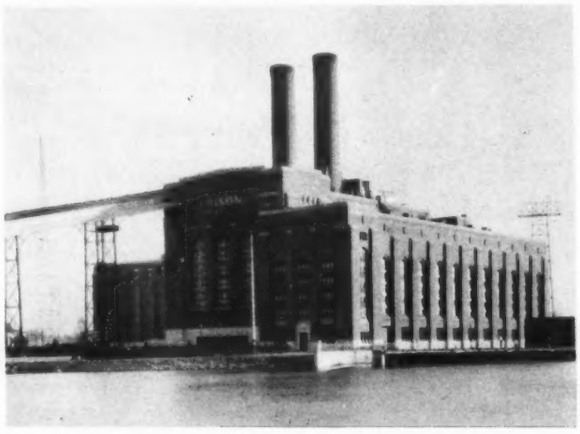
(96) Lucy Furnace, 1872, marks Carnegie's and Pittsburgh's growing domination in iron and steel

(97) Yorkship Village, near Camden, N. J., Electus D. Litchfield, architect. War industry town planned for U. S. Shipping Board

1920-1941

NEW ENGLAND

(98) W. K. Hoyt Ski Lodge, Stowe, Vt., 1940, by Royal Barry Wills. Vernacular materials acclimate modern forms to New England



(99) Power Plant, Edison Electric Illuminating Co., Weymouth, Mass., 1921, Stone and Webster. First high-pressure central station

(100) Rindge Technical High School, Cambridge, Mass., 1932, Ralph Doane. Continues Yankee leadership in technical education

(101) Factory, Simonds Saw and Steel Co., Fitchburg, 1930, by Austin Co. Pioneer: windowless, super-span controlled-conditions

(102) Ford House, Lincoln, Mass., 1939, Walter Gropius. Imported constructivism, in theory strangely akin to Yankee technical tradition

YANKEES DIVERSIFY

ALTHOUGH NEW ENGLAND'S textile mills had met increasing competition throughout the early twentieth century, it was only after World War I that her production of cotton goods dropped below southern yardage. Similar situations faced other Yankee factories. In general, industry met the challenge by diversification, specialization, and ingenuity. In industrial architecture, this trend is seen in the development of windowless, super-span, controlled-condition factories planned to provide uniformly high efficiency through optimum layout and environment.

Industrial depression encouraged New England to take stock of her resources and plan her future on a regional scope. The establishment of year-around recreational facilities is part of the rehabilitation thus developed, and has resulted in many interesting architectural projects. The national status which many New England educational institutions have achieved has produced unprecedented programs of university, college, and preparatory school expansion.

In general, New England remains faithful to the stylistic forms her builders long ago adapted from European precedents. Significantly, New England leads all other regions in the preservation of historic buildings; and a Boston architectural firm restored Virginia's Williamsburg. Despite this apparent conservatism, it is interesting to speculate on what compromise will manifest itself from the fusion of forthright Yankee reticence and austere Lutheran rationalism now being prepared within John Harvard's august yard.

. . . NEW YORK

(103) Waldorf-Astoria, 1931, Schultz & Weaver. Grand Hotel straddles railroad

(104) Rockefeller Center, 1931-40, Reinhard & Hofmeister; Hood & Fouilhoux; Corbett, Harrison & MacMurray. Grouped skyscrapers dramatize economics

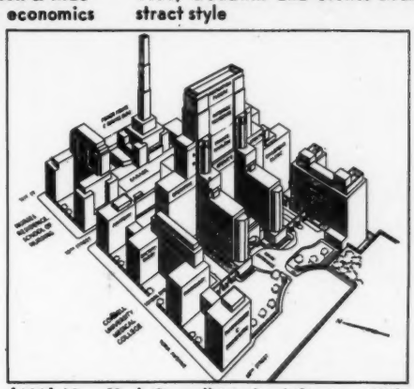
(105) Museum of Modern Art, New York, 1939, Goodwin and Stone. Dramatic abstract style

BOOM AND AFTERMATH

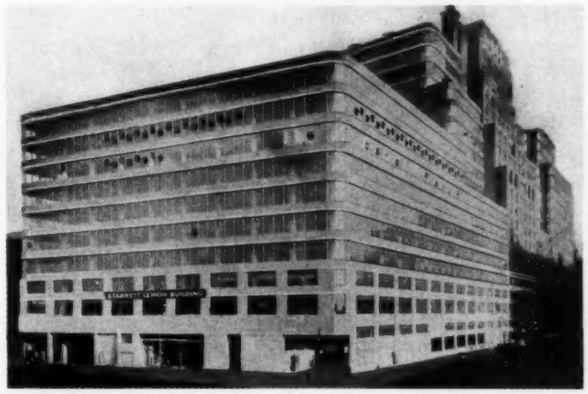
For a frenzied decade following World War I, the rise and fall of Wall Street's brokers' boom obscured the basic trends of New York development. In both metropolis and up-state village, mounting dissatisfaction pressed for amelioration of industrial environment, for expanded social services, and more worthy communal equipment. The utopian suggestions of pre-War reformers gave way to discussions of practical procedures or even to tentative experiments. Significant parallels appear in the flood of social legislation, in the comprehensive improvement of public health facilities — recreational, remedial, or prophylactic, — in the progress of low-cost housing, in the initiation of comprehensive programs for municipal and regional betterment, and in the rise of governmental architectural bureaus.

The application to architectural design of the technique and findings of modern science has increased enormously the functional and structural efficiency of all types of modern buildings. Introduction of the principles of industrial management to construction operations has made possible incredible records in speed and size. In all these fields the tremendous resources and demands of New York — state and city — have made its contributions fundamental.

Cosmopolitan in population, culture, and architecture, New York has been tardy in formulating stylistic synthesis. Every eddy of fashion has deposited its ornamental flotsam. In recent years, however, an observing eye discovers more and more buildings that express their basic soundness of layout and structure in a fresh, exciting vocabulary.



(106) New York-Cornell Medical Center, 1932, Coolidge, Shepley, Bulfinch, & Abbott. Significant complex of hospital, clinic, and school



(107) Starrett-Lehigh Building, New York, 1931. Cory, Cory, & Matsui. Cantilever slab allows continuous windows for factory lofts

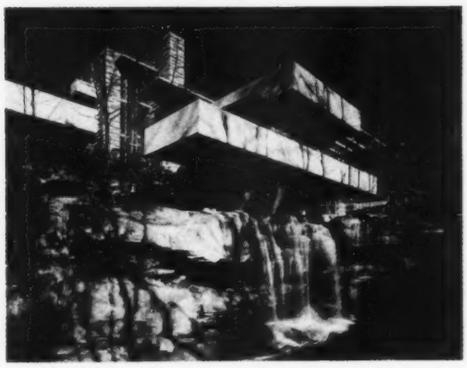
(108) New York housing and slum clearance experience was a laboratory for national program, with Williamsburg, 1935, a landmark

(109) Radburn, N. J., 1928, C. Stein, and H. Wright. First to approximate the "neighborhood unit"

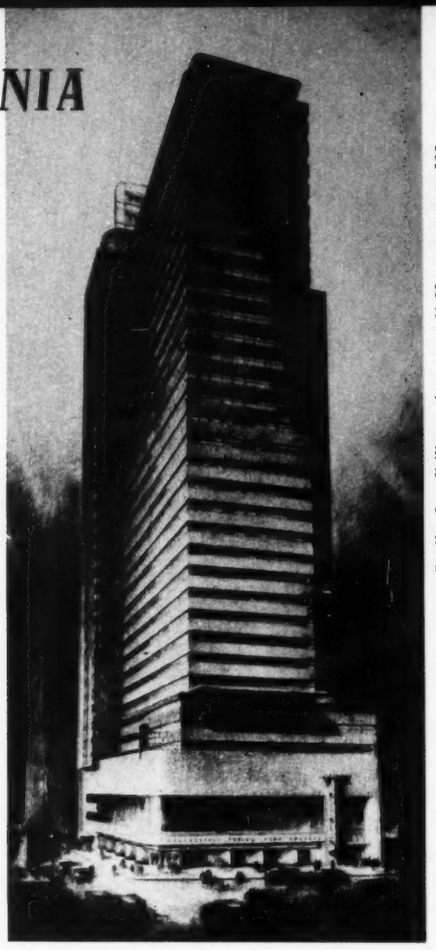
(110) In light, air, and open space, Henry Wright dubbed these Park Ave. cliff-dwellings as "super slums"

(111) Jones Beach, L. I., 1928. Superb unit in unrivalled system of regional parks and parkways

1920-1941 PENNSYLVANIA



(112) Wright's Falling Water, Bear Run, Pa., 1938. Romantic site provokes romantic exploitation of structure



(113) Streamlined bank and office building, Philadelphia Savings Fund Society, 1932, by Howe and Lescaze

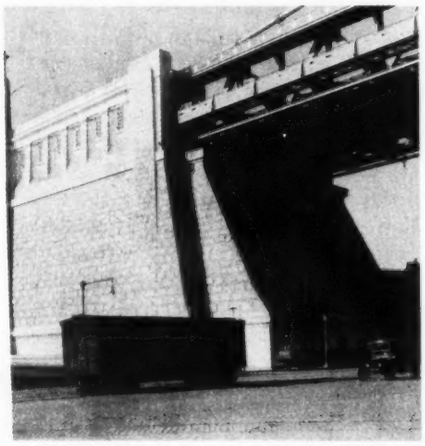
Credits for all illustrations, pps. 61-80, appear on p. 118

KEYSTONE WORKSHOPS

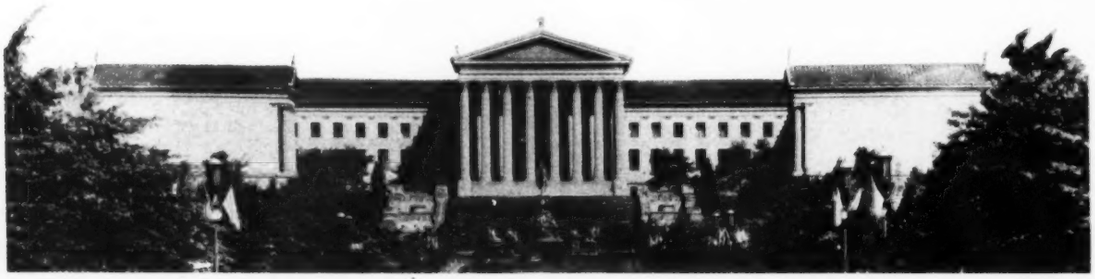
POST-WAR Philadelphia has been chiefly occupied with problems created by metropolitan congestion. Penn's ancient grid of narrow streets, hopelessly inadequate for modern motor traffic, has been supplemented by a noble Parkway, a bypassing ring, and Roosevelt Boulevard. The relocation of the Pennsylvania station and the post office, already accomplished, the elimination of Broad Street Station and its "Chinese Wall" of track, and other ameliorative projects will furnish further relief.

Most Philadelphia buildings of the past two decades have aimed to conserve traditional architectural values. The Art Museum's monumental classicism, the super-medievalism of Bryn Athyn's church of the New Jerusalem, the picturesque romanticism of Pittsburgh's Cathedral of Learning are typical in revealing catholic taste and high technical proficiency. A more vital re-interpretation of the classical tradition is manifest in Paul P. Cret's anchorages of the Camden bridge, his Rodin Museum, and his Federal Reserve Bank.

Pennsylvanians have on occasion experimented with more radical expression. Howe and Lescaze, in the Philadelphia Savings Fund Society building, created interiors of startling freshness. It remained, however, for F. L. Wright in "Falling Water" to achieve the ultimate apotheosis of Pittsburgh glass and steel, Allegheny ledgestone, and Lehigh cement.



(114) Philadelphia-Camden Bridge, 1926, Modjeski & Cret. Pioneer in effective architect-engineer teamwork

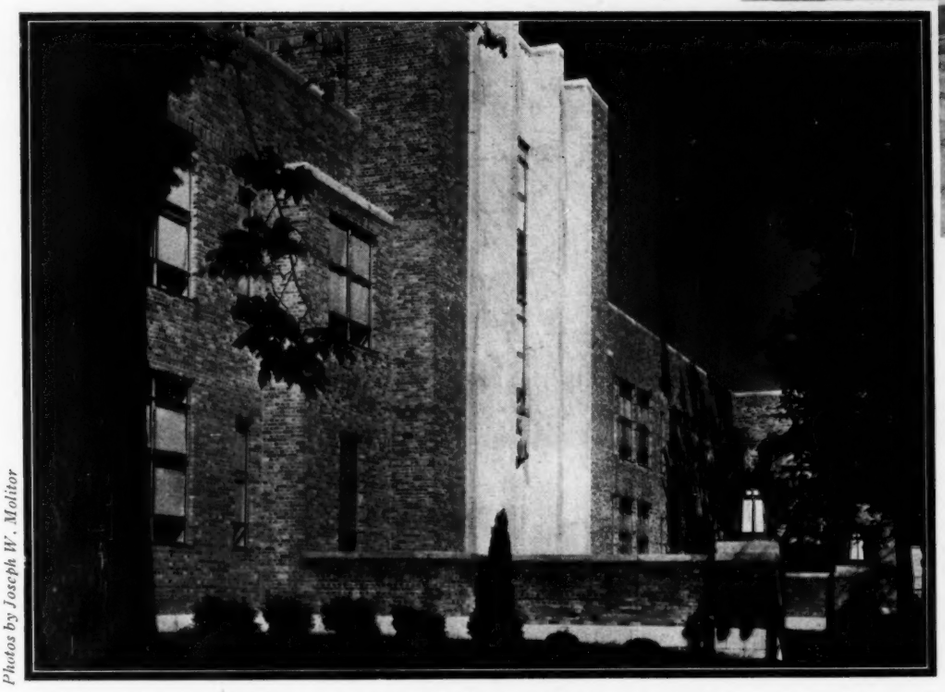


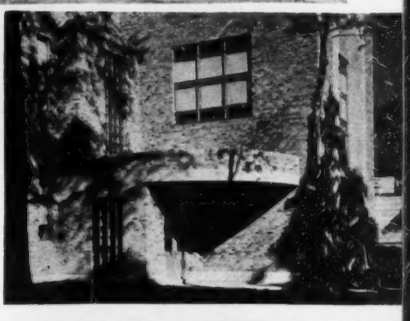
(115) Pennsylvania Museum of Art, opened 1928, Zantzinger & Borie, and Trumbauer. Soaring Olympianly above the Parkway's mundane buzz, Mt. Morris' neo-Hellenistic temple, prefaced by superb polychromy, enshrines a catholic cultural treasure-trove

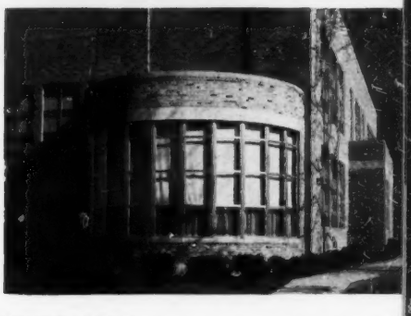
NEW SCHOOLS FOR OLD

A BUILDING TYPES STUDY

In the past two years ARCHITECTURAL RECORD has presented four studies on school design. In 1939 advanced standards for elementary and secondary schools were surveyed. In 1940, specialized phases—the vocational school and consolidated schools—were discussed. These years also saw intense school building activity, partly because Federal money was made available; in any event, many of the outmoded schools of the country sadly needed replacing.



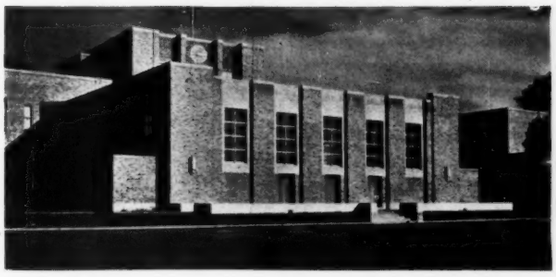




Photos by Joseph W. Molitor

PARK SCHOOL, OSSINING, N. Y., FREDERICK MATHESIUS, ARCHITECT, replaces the edifice phantomed above . . . . . .

Elementary activity programs; separate rooms for music, community use, etc.; provisions for applied arts and sciences typify new facilities . . . . . .



Segregated entrance for community facilities, gymnasium with cork wainscot, complete stage, help integrate school and community . . . . . .

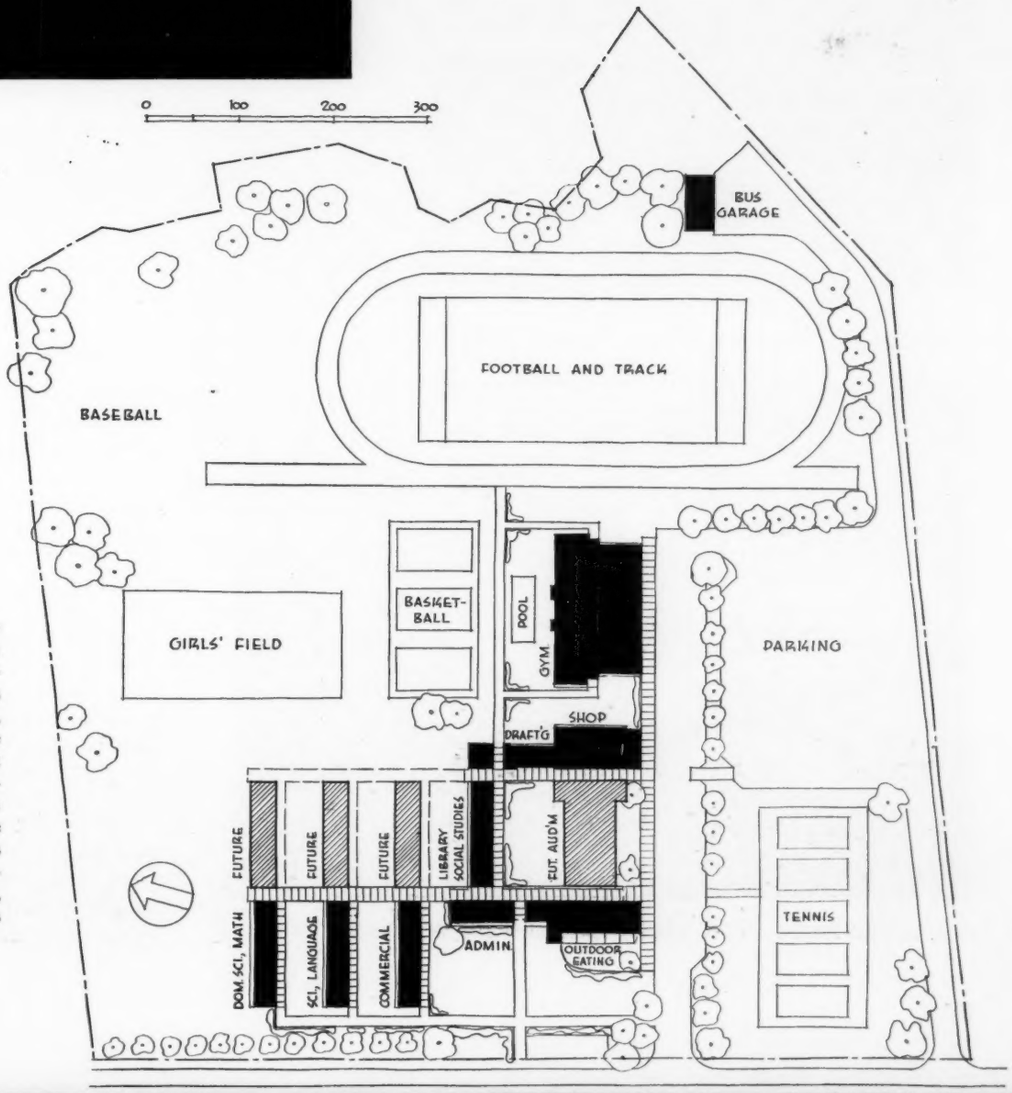
Photos by Esther Born

ADVANCED CALIFORNIA SCHOOL MEETS LIMITED BUDGET

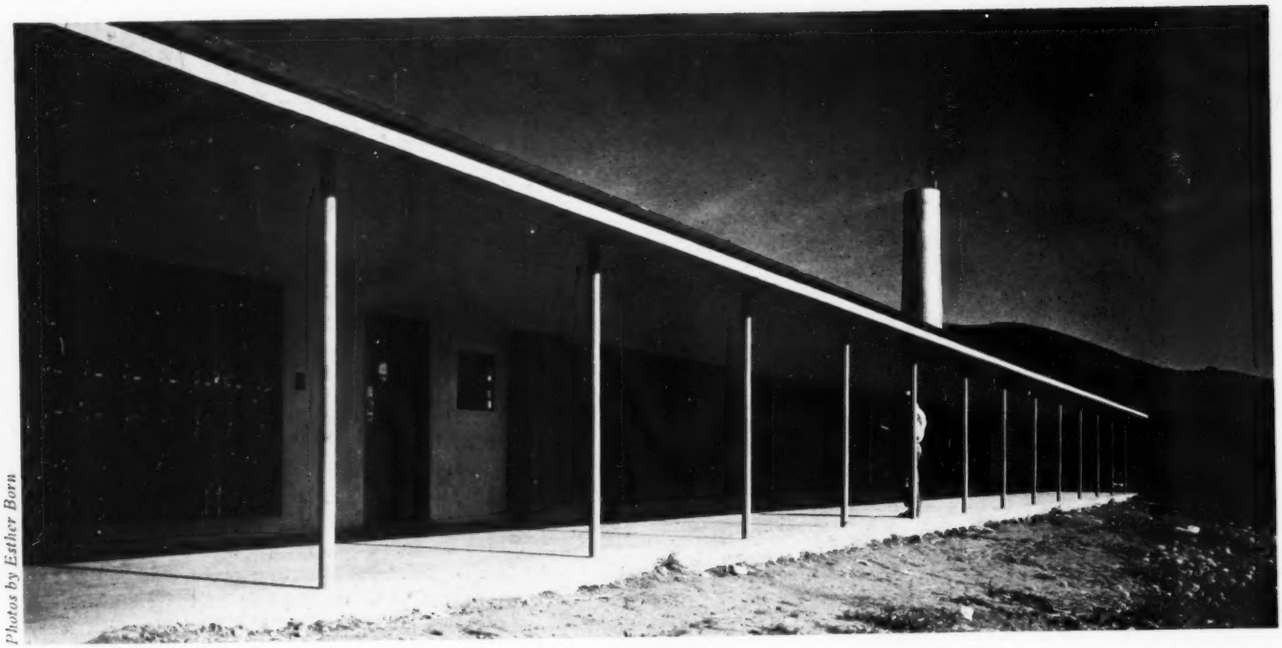
ACALANES UNION HIGH SCHOOL, LAFAYETTE, CALIFORNIA. FRANKLIN & KUMP, ARCHITECTS. In the Acalanes School most of the advanced principles of school design have been successfully applied. The problem presented was difficult. First, access to the school is entirely vehicular. Second, the budget was extremely limited yet the school district wanted completely modern, even advanced, design and equipment. Third, California curricula are never static. Classrooms, activity spaces, administrative offices, etc., must be highly flexible or they suffer early obsolescence. There had to be space for additional classroom units and a future auditorium. Fourth, there had to be provision for intensive adult use of classrooms, assembly spaces and athletic facilities. Elements most likely to be used by adults during school sessions had to be segregated. Large parking areas had to be convenient to all athletic facilities. Fifth, in addition to high State standards, the building had to be made earthquake-resistant. Sixth, soil conditions offered structural difficulties.

CONSOLIDATED SCHOOLS AND HIGH SCHOOLS

IN 1939 and 1940 ARCHITECTURAL RECORD'S Building Types studies on schools reported numerous changes in school design principles which educators advocated. In teaching practice there has come to be an increasing emphasis upon laboratory methods, in even the most static subjects; and the pupil's school life is being integrated with the community—and vice versa. Also, the past few years have introduced a need for structural economy, and it has been recognized in many parts of the country that requirements change so rapidly that the plan must be flexible, the entire plant dynamically useful.

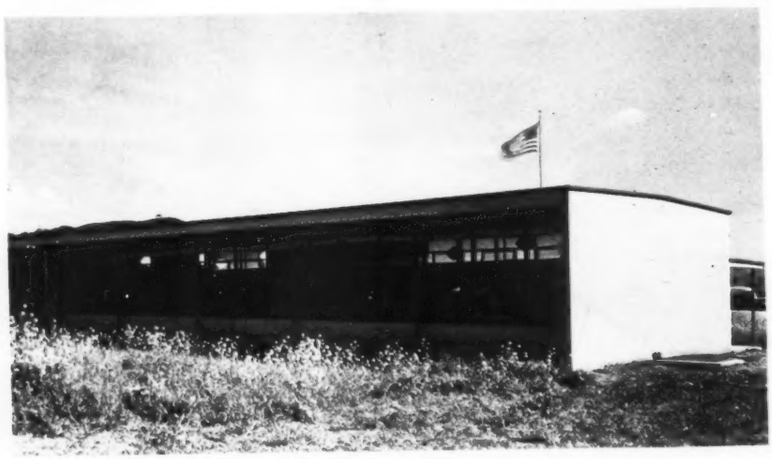


PLOT PLAN: There is no monumental main entrance; instead, a 500-ft. open corridor on the south gives access to classroom wings, cafeteria, shop and gymnasium. More than 9 school buses (present requirements) discharge pupils at loading dock. Areas cross-hatched indicate future expansion. Open plan permits proper orientation and functional relationships for study, work and play, and minimizes the noise nuisance.



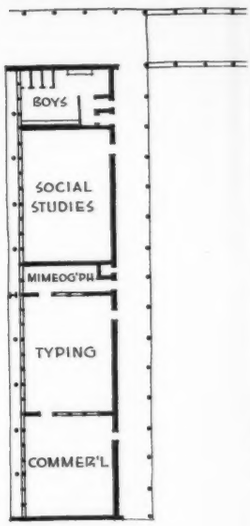
Photos by Esther Born

OUTSIDE CORRIDOR leads to classroom units; sub-corridors to each wing



EXTERIOR of class unit: At left is a vertical I-beam, part of earthquake bracing

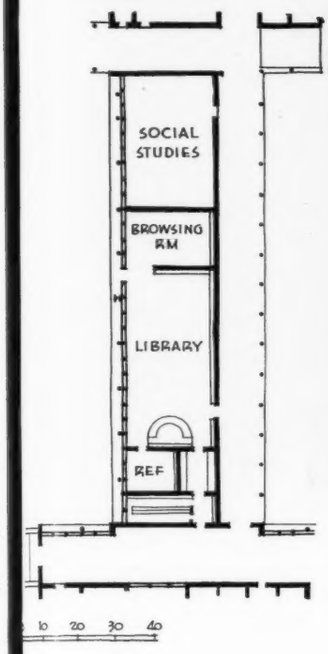
CLASSROOM INTERIOR is bilaterally lighted, has acoustic ceilings



CLASSROOM WING

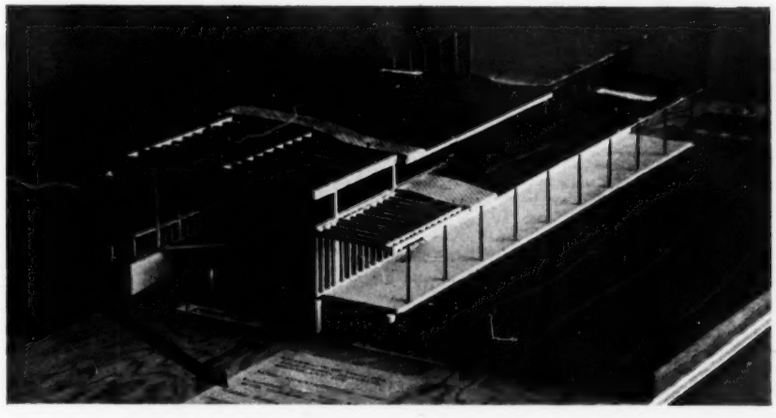
PARTLY BECAUSE the method of seismic bracing demanded, and partly because greater flexibility of plan was thereby achieved, each classroom wing is an open loft space. Dividing partitions of plywood were added later and can be relocated. Both removable acoustic ceiling tile and linoleum floor are continuous over and under partitions. Copper convector radiators have individual thermostatic controls to permit any possible arrangement of partitions without unbalancing system. Mechanical lines under floors are readily accessible for changes or repairs. With bilateral lighting satisfactory workrooms and offices can be located on the corridor wall, an even high intensity of light covers the entire classroom, and the resulting low ceilings in turn lower the plane of artificial light in relation to working planes.

LIBRARY WING

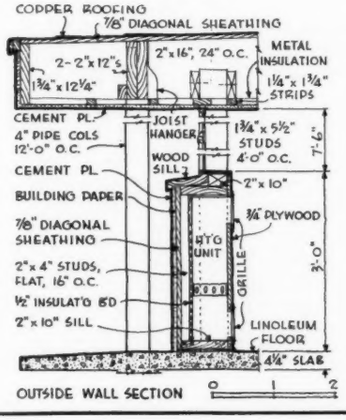


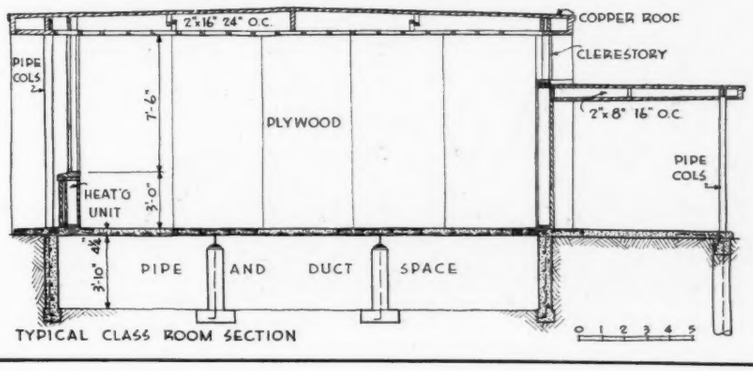
IN THE LIBRARY, as in other units, low ceilings and a close relation between outdoors and indoors make the scale of the building intimate and human. The use of natural materials and warm colors increases this effect. All ceilings are insulated and heat-reducing glass is used to keep room temperatures comfortable in hot weather

CONSTRUCTION is standardized on a 4-ft module, used throughout the plant. This simplifies sash sizes, permits use of standard 4-ft. plywood panels and 16-in. ceiling tiles, also construction economies. Along north walls of class and study units are continuous windows 7 ft. 6 in. high. Over the unit corridors are clerestories with glare-reducing, heat-reducing glass. 10 ft. 6 in. ceilings reduce building volume and heating expense. In excavating, an objectionable adobe stratum was removed and the space beneath units was left open for supply lines. Framing for concrete floor forms was reused for wall studding. Roof is copper; exterior wall, wood frame and stucco; interior finish, natural plywood. Total cost including site, fees, furnishings —$330,000; cost per sq. ft., $3.67. These low figures reduce interest on school bonds and lower insurance costs.



MODEL was built for study and for client's information



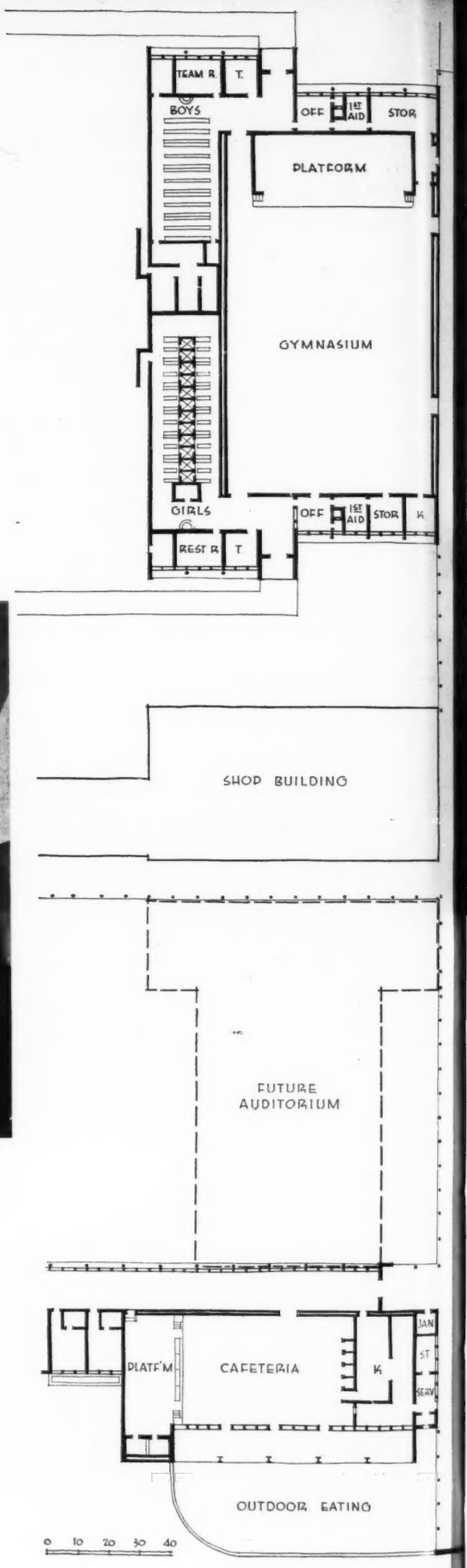


CAFETERIA is also used for assembly purposes. Plan at right shows the outdoor dining spaces provided and area remaining for construction of a future assembly hall. This latter space, enclosed on four sides, is now available for outdoor gatherings. The cafeteria will seat 300 persons and has a completely equipped stage. It is located conveniently to the parking area. Both cafeteria and shop have flat rigid steel framing.

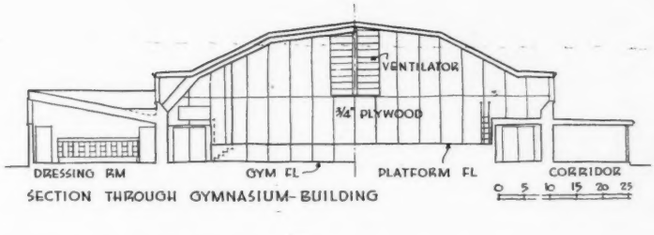
GYMNASIUM (opposite page) has novel construction. It is the only unit in the plant built of reinforced concrete and has a ribbed arch construction. The interior is surfaced with ¾ in. plywood. Boys' and girls' locker rooms are situated between the gymnasium and outdoor facilities, which include a swimming pool and basketball courts.

Photos by Esther Born

Above, cafeteria set up as assembly hall; below, balcony for stage lights, etc., beneath which are storage lockers



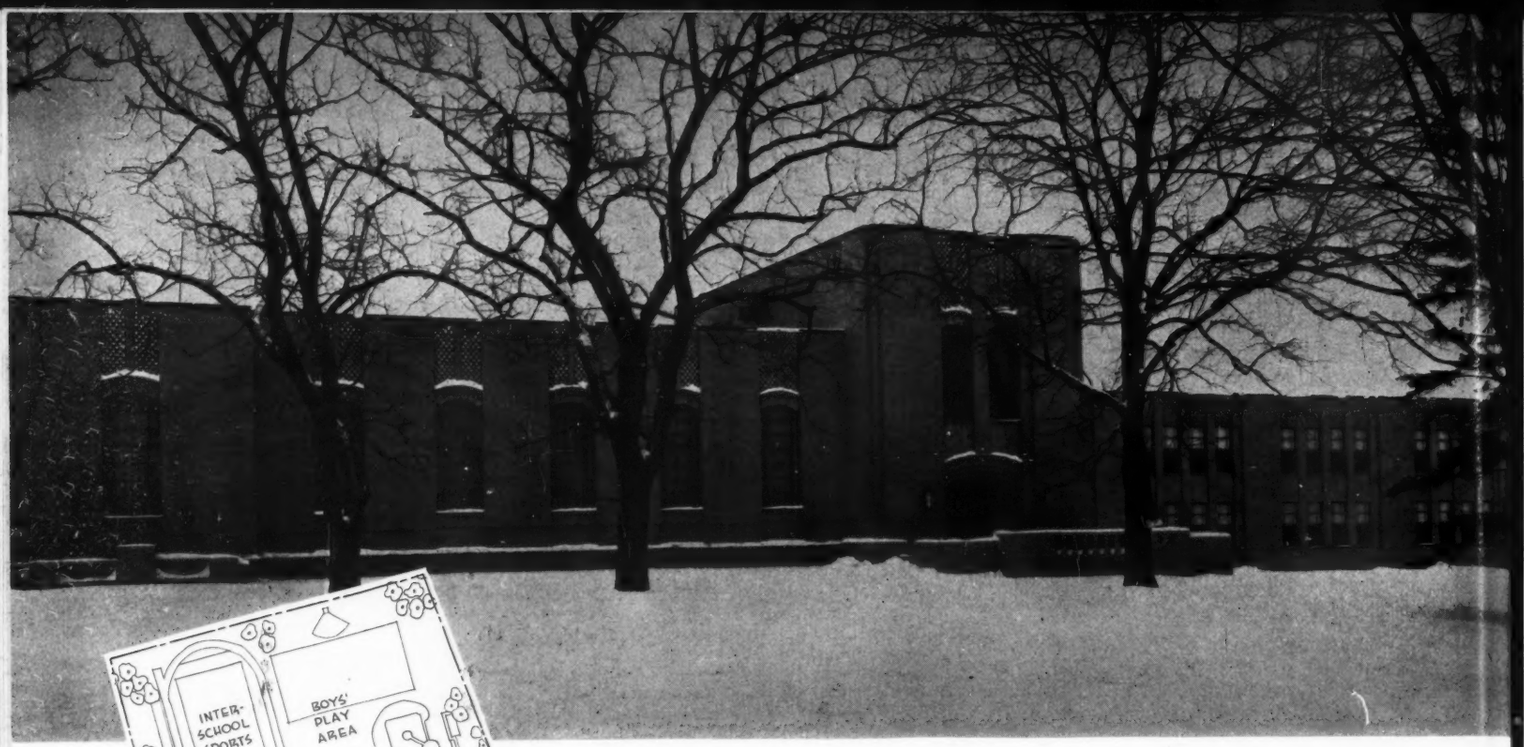
EXTERIOR of gymnasium showing girls' entrance at left. Behind windows at right are a series of offices. Note use of canopies

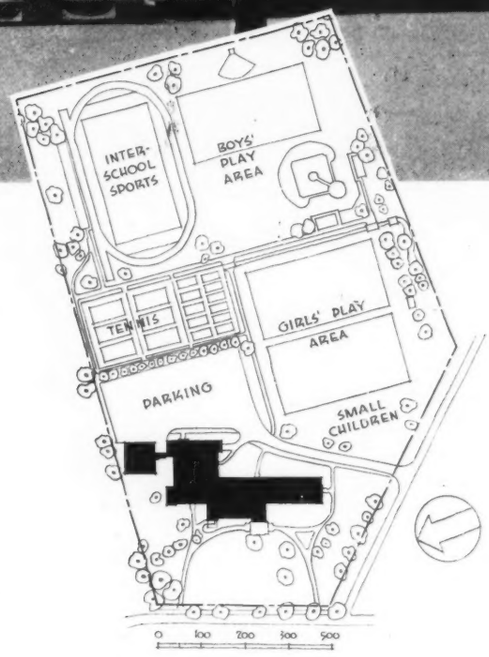


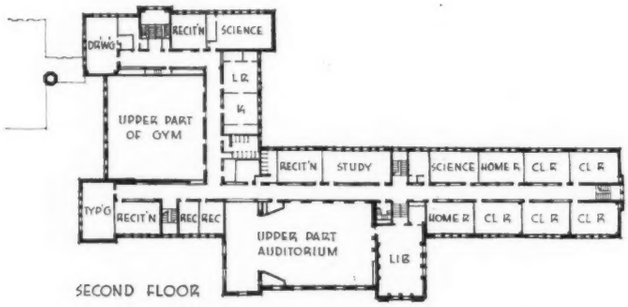
SECTION THROUGH GYMNASIUM-BUILDING

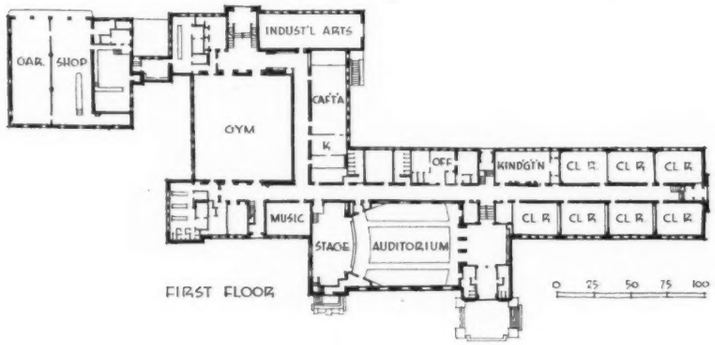
GYMNASIUM is planned for sports requiring large area and has stage

CHOIR REHEARSAL backstage in gymnasium









CONSOLIDATED SCHOOL IN NEW

CLYDE CENTRAL SCHOOL, CLYDE, NEW YORK. CARL C. ADE, ARCHITECT AND ENGINEER, THOMAS LYON WHITE, LANDSCAPE ARCHITECT. The school campus has a total area of 49 acres. The details of plan and design are the result of close collaboration with the New York State Department of Education. Noteworthy are the inclusion of a music room, an industrial arts department, and health and dental clinics.

The school is the result of 20 years of increasing flexibility to make it possible for any child to follow the studies for which he is best suited. Many of the facilities provide for exploratory subjects; while 20 years ago the program concentrated on preparation for college, it now trains students for the practical business of living. Thus, as illustrated in the photograph of the shop on the opposite page, the practical arts which are necessary to life in a rural community are studied.

The school cost approximately $600,000 including equipment and has a capacity of 850 students who range from kindergarten through high school.

OL IN NEW YORK

DETAIL of main entrance

Photos by Blair Studio

INDUSTRIAL ARTS DEPARTMENT includes woodworking, metalworking, auto mechanics, ceramics, electrical and other shops

AUDITORIUM AND LITTLE THEATER provides for community and extra-curricular needs

ACADEMIC LIBRARY is one of three in the school; others are children's and English libraries

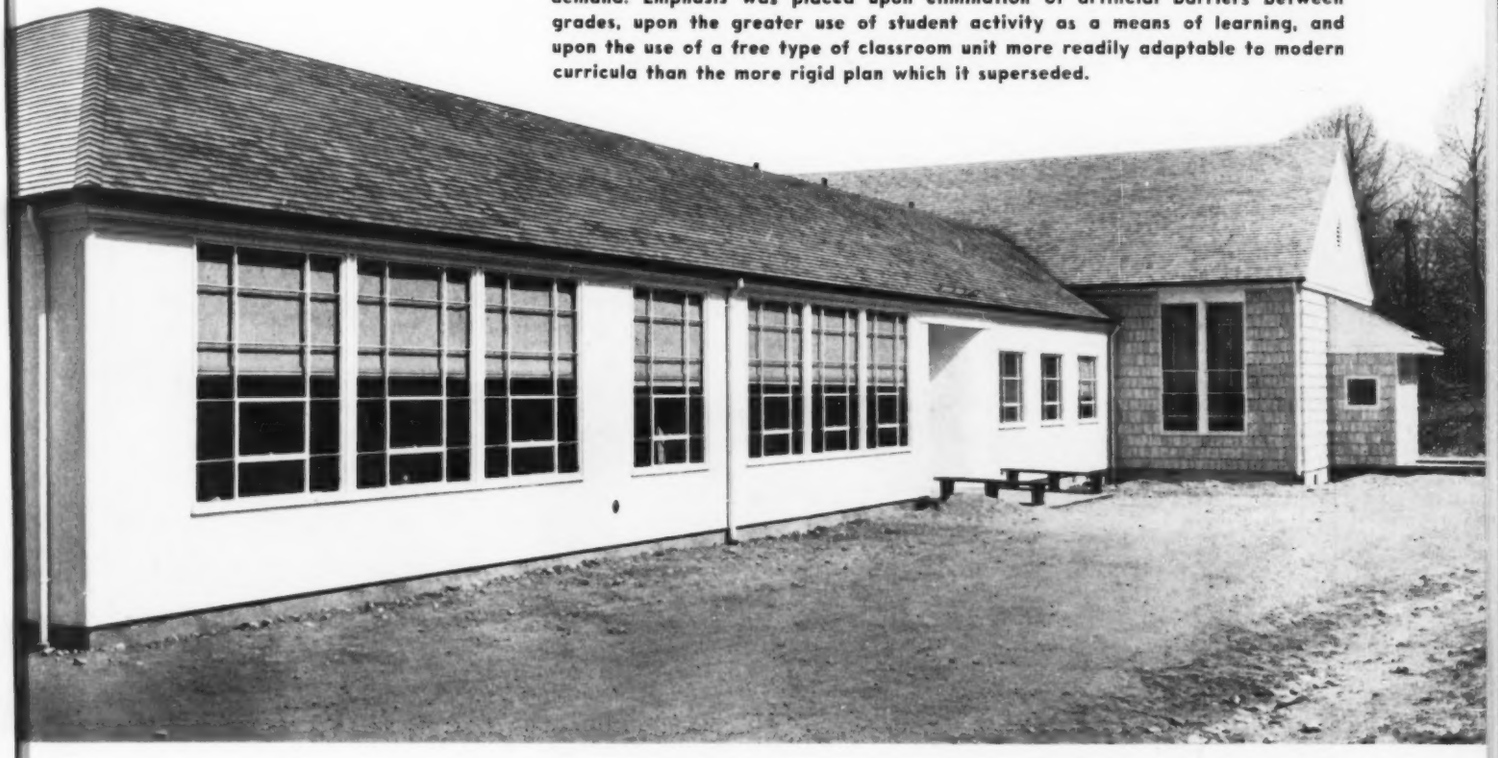
CAFETERIA serves also as a community room, has stage, seats 150 for public speaking, drama, extra-curricular activities

Photos by Blair Studio

GYMNASIUM is convertible into two full gymnasia, one for boys, one for girls, by means of folding partitions

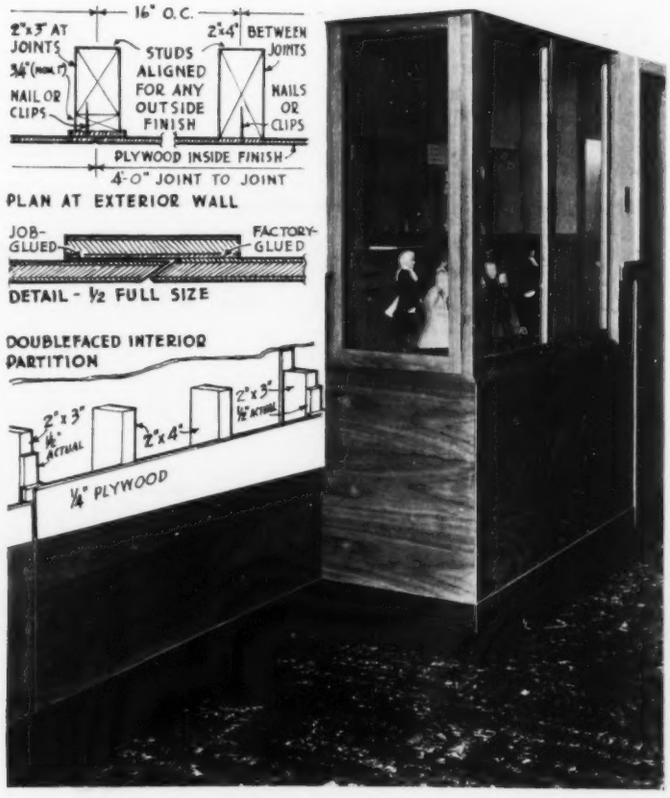
ELEMENTARY SCHOOLS

In February 1939, the RECORD presented a study on schools which was in great demand. Emphasis was placed upon elimination of artificial barriers between grades, upon the greater use of student activity as a means of learning, and upon the use of a free type of classroom unit more readily adaptable to modern curricula than the more rigid plan which it superseded.



USE OF PLYWOOD FOR SCHOOLS INVADES NEW ENGLAND

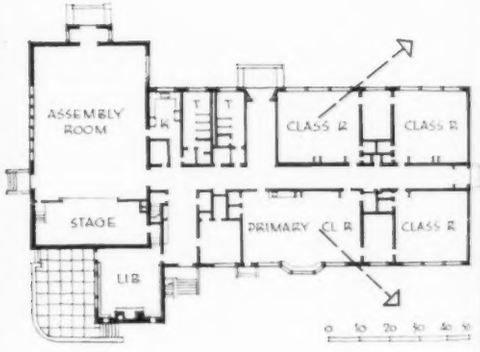
NEW FAIRFIELD ELEMENTARY SCHOOL, NEW FAIRFIELD, CONN. SEARS & FOOTE, ARCHITECTS. In determining type of construction the architects found State school authorities more concerned with circulation and exit facilities for one-story schools than with "fireproof" construction. Hence, plywood was selected. Upon being assured that plywood could be conventionally overcoated, local authorities accepted the architects' recommendations—on trial. Reports now indicate great local satsifaction. In this school was used a patented plywood joint, invented by Oscar Fisher, which makes erection of plywood interior finish fool-proof. Cost 20.5 cents cu. ft.

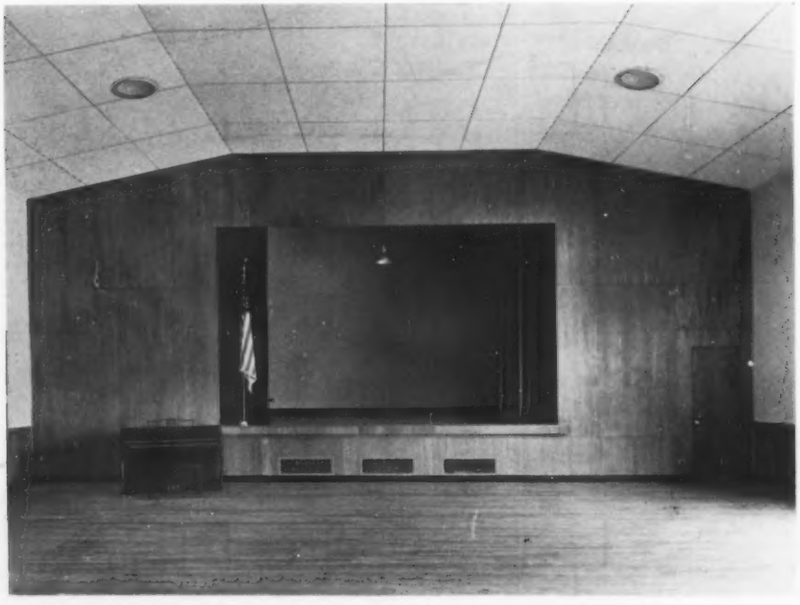


Photos by Gottscho, Rodney McCay Morgan

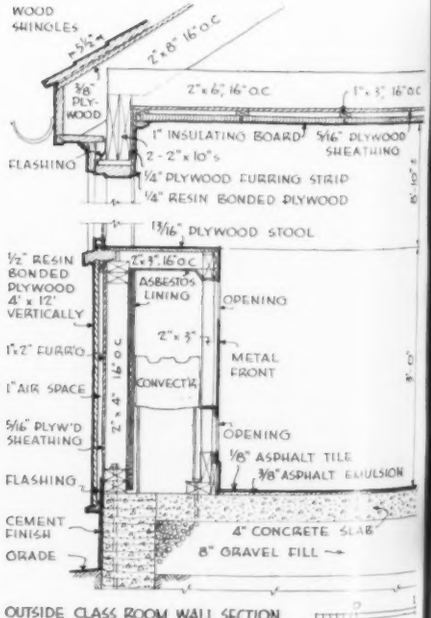
LIBRARY has, like other spaces, acoustically treated ceiling

IN DESIGN, both architectural and educational, the school is well advanced. The basic unit, shown on the facing page, is a flexible classroom in which are included study alcoves, small libraries, storage closets, work counters with sinks and flexible seating arrangements which permit the children to organize under their own leadership while the teacher supervises the class without bossing it. Interiors of all classrooms are plywood, floors are asphalt tile applied directly to a concrete slab. Through ventilation is assured by the use of projected casements and an exhaust system which takes used air through the coat lockers and out to the roof.



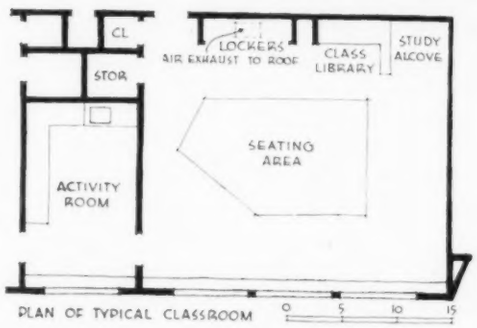


ASSEMBLY ROOM is entirely of plywood with walnut wainscoat and areas above painted



OUTSIDE CLASS ROOM WALL SECTION

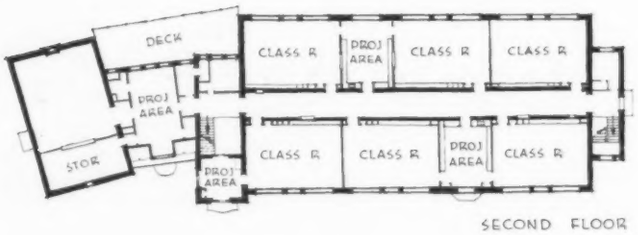
TYPICAL CLASSROOM. At right are shown reading alcove and teacher's files



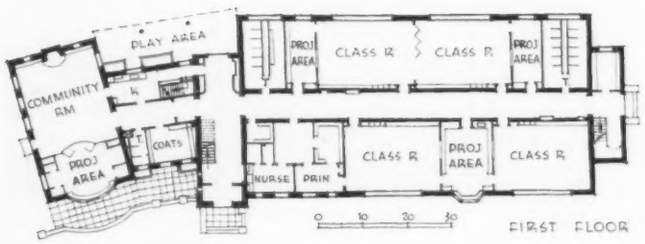
WORKROOM adjoins each classroom

PRIMARY ROOM has bay window for plant space. Sink and drinking fountain are set at child height

OHIO SCHOOL WINS ARCHITECTS' SOCIETY GOLD MEDAL



SECOND FLOOR



FIRST FLOOR

ARLINGTON ELEMENTARY SCHOOL, COLUMBUS, OHIO. HOWARD DWIGHT SMITH, ARCHITECT; KYLE W. ARMSTRONG, ASSOCIATE. This school won the 1940 gold medal of the Architects' Society of Ohio. It is located in a growing suburban community which has a liberal attitude toward progressive educational methods and yet is conservative in building tastes. Thus the school represents, to an extent, a compromise between modern "workshop" planning and the traditional 20 x 30 ft., fixed-seat classroom. In combining these two points of view the architect has provided facilities for flexible educational programs within a conservative building budget. Except for one, all classrooms have project areas for use either separately or in conjunction with the room. Windows between class and project area can be blocked by swinging blackboards.

KINDERGARTEN has rostrum at south end which is also used as project area. Over the project room is balcony for extracurricular activities. Window in ceiling at left permits unobtrusive observation of kindergarten activities

CLASSROOM AND PROJECT AREA are separated by windows

The segregated kindergarten wing not only isolates its pupils from those in upper elementary grades, but also serves as a community activity room. When so used, it can be shut off from the rest of the school by corridor gates.

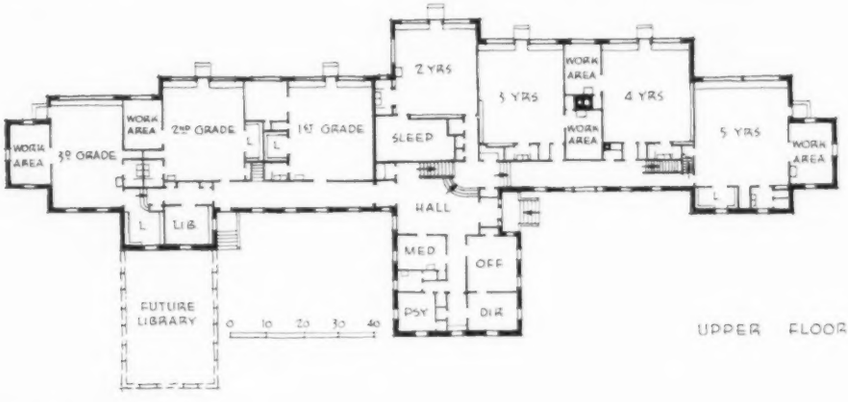
Classrooms are uniform in size and detail. Traditional cloakrooms are eliminated; instead, individual lockers open into the classroom. Central heating is obtained from the adjoining high school plant. Stairs were located and corridors designed to permit expansion on the east and north.

Local stone was used in most exterior walls. Interiors are exposed brick and cinder block with a minimum of plaster and paint. Trim is of yellow pine. The building was designed for a nominal capacity of 326 pupils at a construction cost of $335 per pupil or $.41 per cu. ft.

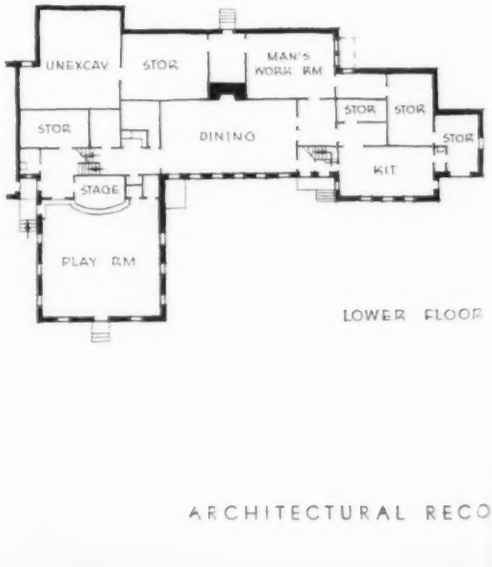
PRINCIPAL'S CLASS ROOM, like all others, has acoustic ceiling

Photos by Gottscho

PRIVATE NEW JERSEY NURSERY SCHOOL SERVES AS MODEL



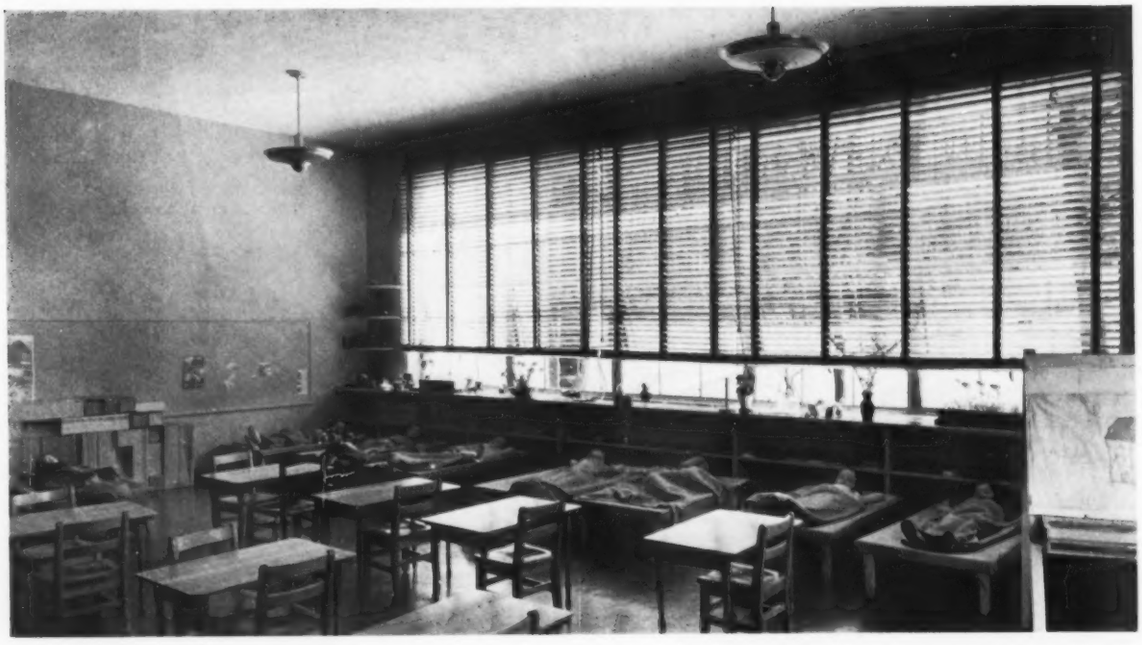
THE LITTLE SCHOOL, ENGLEWOOD, NEW JERSEY. HARDY AND GOUBERT, ARCHITECTS. The Little School was founded in 1930 as a private nursery school to incorporate the most modern educational practices. At the same time, the educational program was designed to retain the best features of traditional practice. Within 5 years the school had expanded to include first, second, and third grades. In 1939 the present building was erected. Throughout the curriculum intensive use is made of natural outdoor facilities which include lawns, trees and a brook. All classrooms open directly on playgrounds. Large windows on the south end take advantage of a maximum amount of sunshine. Each class is provided with a complete unit consisting of one large room, an auxiliary room, a coat room and a toilet. Corridors are equipped with exhibition cases where children's nature collections are shown. The small library has furniture to accommodate several ages of children. The music room, on a lower level than the classrooms, takes advantage of natural grades to open directly on ground level.



NURSERY SCHOOLS

In February 1939 the RECORD reported advanced nursery-school planning principles. At almost the same time, the school shown on these pages was being erected. Principles enunciated included a close integration of outdoor and indoor areas, inclusion of toilets in classroom area for smallest children; provision of sleeping facilities; and provision of workrooms or alcoves, and cost cubicles.

Plan at left illustrates progressing classroom needs: 2-year-olds have separate toilet, sleeping room, sink and coat cubicles in classroom; 3- and 4-year-olds need no sleeping room, gain a workroom; 5-year-olds have a coat alcove. Photos: above, workroom; right, exterior and interior of classrooms



Above and at right: Older nursery-school children rest on cots in classrooms or on terraces; 2-year olds have a separate sleeping room. Below, right: kindergartners (4-year olds) still require aid in learning to dress, so coat cubicles open into classroom. All rooms have open storage bins under windows; stool is extended to form a work counter. Lower right: music room (playroom)

NURSERY AND PRIMARY grades are in separate parts of the building. In first, second and third grades, the basic skills of reading, spelling, writing and arithmetic are taught. Subject matter is appropriate to children's ages. In addition to classroom study, where work projects are an important part of the curriculum, field trips show the children the general setting, transportation, business, etc., of the city; and interest in nature is stimulated to the advantage of studies in the natural sciences.

Creative work in singing and rhythms is emphasized in all groups, and carpentry is an important part of project work throughout the school.

Children eat, work on projects and study in groups to learn how to get on together; in primary grades, study in pairs is also encouraged. Medical attention is provided by the public health department of the local hospital and an advising physician.

STADIA: SEATING and EXIT DESIGN—2

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
JUNE 1941

Aisles. Stadia are generally divided into sections by transverse aisles. The width of these sections, in terms of number of seats, varies from 24 to 32 seats per row. Most common are sections 26 or 28 seats wide.

Aisles adjacent to end walls of grandstand are advantageous if connected directly to an entrance, but they are not essential. By placing one half section against the wall at each end of the stand, one less aisle will be required.

Aisle widths vary, but 3 ft. is most widely accepted. This width permits a single file in one direction and an usher going in the opposite direction. Aisle 4 ft. wide will permit two lanes of traffic in the same or in opposite directions. If there are aisles on both sides of an entranceway they need be only 2 ft. wide. This width is the minimum advisable to insure sufficient clearance against the hazards of clothing catching in the seats or disturbing the occupants of the end seats.

Seat risers more than 9 in. high will require an extra step in the aisle. In this case make each step riser one-half the height of the seat riser, and the step tread one-half the width of the seat tread. Steps should be full width of the aisle.

Longitudinal aisles, either in front of the first row of seats or part way up the stand should be avoided since their use obstructs the view of spectators seated in back of them. However, where seats are not reserved, an aisle at the entrance level is a considerable convenience to spectators in choosing their seats, although it does interfere with the view of those already seated. When such an aisle is employed part way up the stand, sight lines for several rows above it should be checked to determine the effect of the extra tread width.

Entrances and Exits. In the small stands which do not have entrance through vomitories, it is preferable to have entrances from the field level at each transverse aisle rather than provide entrances at each end only and a longitudinal aisle leading to the transverse aisles. When the small grandstand is built on an embankment, entrance to the transverse aisles can be made from the rear, either directly, or by means of a longitudinal aisle connected with them.

In larger stadia, entrance is usually through vomitories whose widths may vary from 4 to 8 feet. A 6-ft. width is most common. Standard requirements for exits are based on traffic lanes of 22-in. width. Widths of vomitories and passageways should therefore be determined with this minimum in mind. Handrails extending not more than 3½ in. from the walls are not considered as reducing the effective width.

Width of exits is specified by most building codes in terms of number of seats to be handled. For example, if 8 in. is required for each 100 seats, a single vomitory or exit serving a section of 800 seats would require a width of 64 in. This should be increased to 66 in. to provide for three 22-in. traffic lanes, the rule being to increase the width rather than reduce it.

When seats are not provided with back rests, many spectators approach the exits by walking over the seats rather than in the aisles. In such cases, therefore, it is not necessary to have the width of the aisles equal to the width of the exits, and some codes take this into consideration. The code which required the width of exits to be 8 in. per 100 seats, for instance, permits the aisles to be 6 in. per 100 seats.

The location of vomitories will depend upon the contour of the site and the size of the particular section to be served. Where the section is relatively small, the vomitory can be at the same level as the entrance, thus avoiding ramps or stairs. For larger sections it is advisable to place the vomitory part way up the stand so that it will be served by an aisle below as well as the aisle above. In large stadia, a second row of vomitories is often provided.

Stairways and Ramps. The rate of egress from stairways and ramps is not constant, but some authorities consider 30 persons per minute per 22-in. traffic lane about average for stairways, and 37 persons per minute per 22-in. lane in ramps. Other authorities give higher rates, in some cases assuming a rate of egress of 45 persons per minute per traffic lane for both stairways and ramps. On this basis, if it were desired to exit an entire audience of 10,000 persons in 5 minutes, a total of 45 lane widths would be required for ramps, vomitories, stairways or gates. This total width should be maintained to the outside of stadium and enclosure.

In designing grandstand stairways, common rules are widely used. These require that the sum of riser heights and tread width, in inches, shall not be less than 17½ nor more than 18; that the sum of 2 risers and 1 tread, in inches, shall not be less than 24 nor more than 25; that the product of riser and tread, in inches, shall fall between 70 and 75. Risers of 6½ to 7½ in. with treads of 11 to 10 in. are most commonly used. See also American Architect T-SS B16.1.1.

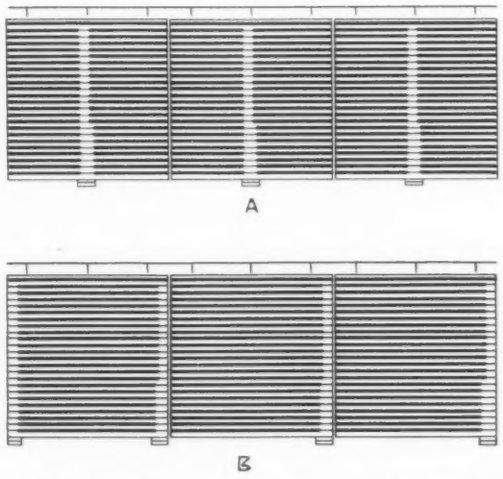
The capacity of ramps may be considered as being between that of stairways and level passageways. They are recommended primarily for greater safety rather than for greater capacity. Requirements for building exits often limit ramp slopes to not more than 1 in 10 because of the danger of possible panic from fire or other cause, but since this danger is less in grandstands than in buildings, somewhat steeper slopes are permissible. Ramps with an incline of 1 in 4 have been used, but slopes of 1 in 6 to 8 are safer and more often used. Ramps are longer than stairways of the same height. They are particularly suitable for grandstands where it is not necessary to make maximum use of the space under the deck, and in large stadia.

Walls and Railings. Passage-ways, entrances, back and sides of grandstand must have walls or railings for protection of spectators. These may consist of concrete walls or of pipe sections anchored to concrete or steel, etc., as the case may be. Solid walls in front of the first row should not be more than 3 ft. high above the lower tread. Handrails on enclosed stairways are often placed 32 in. above the lip of the step. Rails and walls at ends of stand and around entrances are usually 3 to 3½ ft. above the front edge of the tread. Solid back walls give spectators protection against strong winds and are frequently made higher for this reason.

Gates and Fences. Entrance gates should be so arranged that a single file of persons entering passes each ticket collector, but should also provide quick, unobstructed passage for exit of the crowd. Swinging gates are commonly employed; sliding gates are also used. Size of gate is determined by same method employed for determining sizes of vomitories, stairs and passages.

If admission is charged, a fence must enclose the entire field. Wire fences are used in a number of instances, but they do not shut off view to people on the outside; hence solid walls of concrete or other material are often employed.

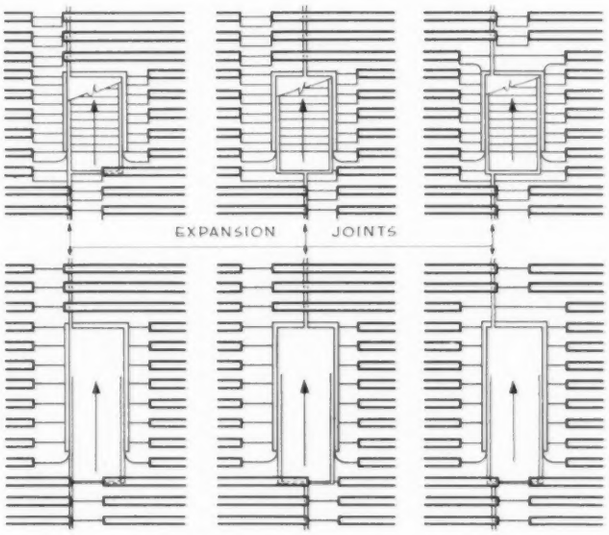
STADIA—SEATING AND EXIT DESIGN—2



ALTERNATE AISLE ARRANGEMENT FOR SMALL GRANDSTAND

(NOT TO SCALE)

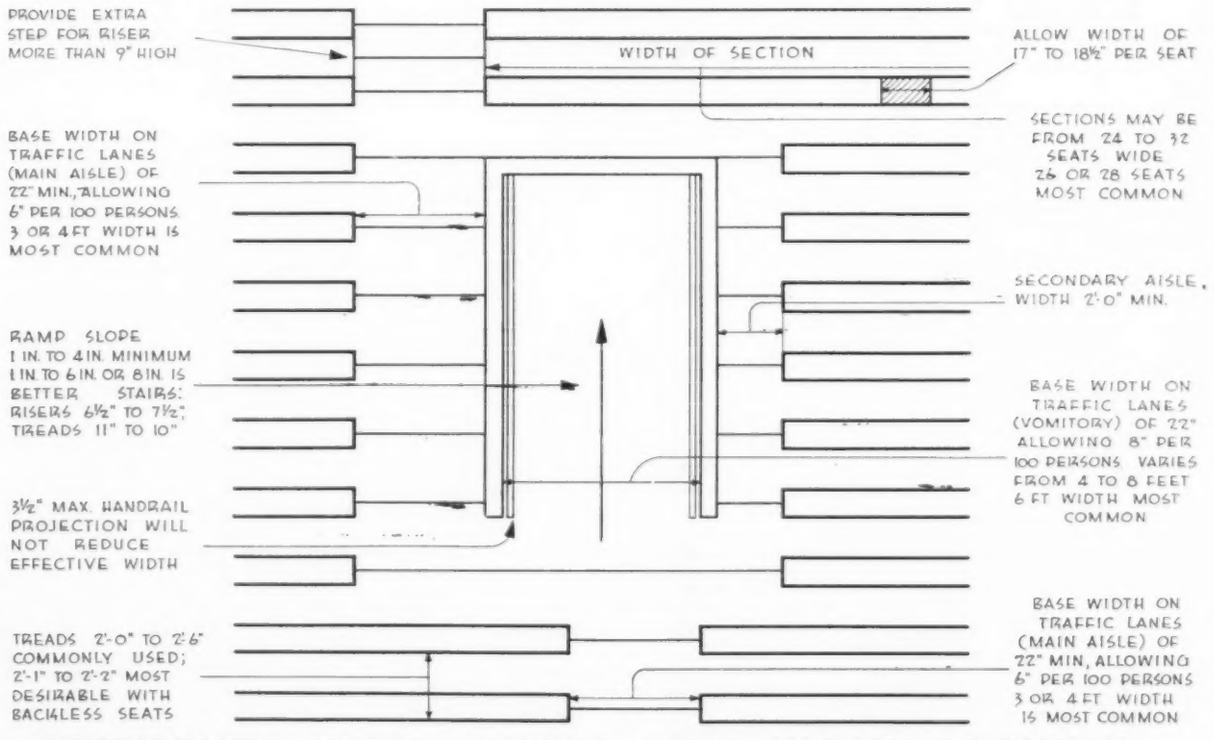
HALF SECTIONS AT EACH END IN SCHEME A REQUIRE ONE LESS AISLE THAN SCHEME B. BOTH ARRANGEMENTS PERMIT CONSTRUCTION OF ADDITIONAL SECTIONS



ALTERNATE ARRANGEMENT OF AISLES AT VOMITORIES AND STAIRS

(NOT TO SCALE)

NOTE THE LOCATION OF EXPANSION JOINTS. THIS PERMITS THE WALLS AROUND THE VOMITORIES TO BE CARRIED ON THE DECK WHILE RAMPS AND STAIRS ARE SELF-SUPPORTING AND FREE FROM THE REMAINDER OF THE STRUCTURE


PROVIDE EXTRA STEP FOR RISER MORE THAN 9" HIGH
WIDTH OF SECTION
ALLOW WIDTH OF 17" TO 18½" PER SEAT
SECTIONS MAY BE FROM 24 TO 32 SEATS WIDE 26 OR 28 SEATS MOST COMMON
BASE WIDTH ON TRAFFIC LANES (MAIN AISLE) OF 22" MIN., ALLOWING 6" PER 100 PERSONS. 3 OR 4 FT WIDTH IS MOST COMMON
SECONDARY AISLE, WIDTH 2'-0" MIN.
RAMP SLOPE 1 IN. TO 4 IN. MINIMUM 1 IN. TO 6 IN. OR 8 IN. IS BETTER STAIRS: RISERS 6½" TO 7½"; TREADS 11" TO 10"
BASE WIDTH ON TRAFFIC LANES (VOMITORY) OF 22" ALLOWING 8" PER 100 PERSONS VARIES FROM 4 TO 8 FEET 6 FT WIDTH MOST COMMON
3½" MAX. HANDRAIL PROJECTION WILL NOT REDUCE EFFECTIVE WIDTH
TREADS 2'-0" TO 2'-6" COMMONLY USED; 2'-1" TO 2'-2" MOST DESIRABLE WITH BACKLESS SEATS
BASE WIDTH ON TRAFFIC LANES (MAIN AISLE) OF 22" MIN, ALLOWING 6" PER 100 PERSONS 3 OR 4 FT WIDTH IS MOST COMMON

DIAGRAMMATIC SKETCH SHOWING MOST COMMON DIMENSIONS

SCALE 3/16" = 1'-0"

ACTIVITY CLASSROOM PLANNING

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
JUNE 1941

Information on this sheet was collected by Ronald Allwork. Sources include The American School Board Journal; and published work of N. L. Engelhardt, Jr., and T. C. Holy, Professor of Education, Ohio State University.

General. Current educational practice trends away from pure memory and recitation work toward programs which show pupils the use of facts available to them. Thus the traditional classroom is becoming, in a sense, a laboratory in which theory is related to practice. To accommodate changing practice, classroom planning has become enlarged in scope, and classrooms are in some cases of greater area. Indeed, with introduction of field trips into academic curricula—trips to the grocer's to apply arithmetic, to municipal offices to observe "civics" in action—the entire community may be taken into the classroom.

In the strict sense, however, the classroom exists, though changed and sometimes called an "activity classroom," "workroom," even a "general education laboratory."

Activity classrooms, under varying designations and with modified requirements, are used in all grades, from nursery school through kindergarten, lower and upper elementary, and secondary grades.

Nursery school programs consist primarily of supervised play, rest, and diet. Pupils are also trained in control of their bodies, in dressing themselves, in independent and inter-dependent activities.

The nursery unit, generally self-contained, includes area and facilities for indoor and outdoor play, rest, sleeping, isolation, bathing, eating, medical care. Toilets and storage space are required; kitchen facilities may be provided centrally for a group of nursery (and higher) units. The playroom is the center of activity. Supervision is highly important. Private entrance and direct connection to segregated outdoor play space are essential. Glass area which admits a maximum of the "outdoors," yet admits no glare, is most desirable. This may entail consideration of blinds, awnings or canopies, and treatment of adjoining grounds to reduce light reflectivity. Furniture, pupils' cupboards, etc., are child-sized. It is often necessary to install a concealed window, "one-way" glazing, or some other device to enable parents and others to observe pupils without being seen.

Kindergarten program extends the nursery program; there is less need for rest and diet control; play becomes organized into games, music, and simple projects.

Sleeping and bathing provisions are usually eliminated; but quarters for resting and project space may be added. Beyond this, requirements are roughly similar to those of nurseries, though slightly larger in scale. The atmosphere should be homelike; a fireplace is considered desirable. Cloak-storage space is usually an open alcove; individual open-fronted cubicles, with separate compartments for hats, coats and rubbers, are provided.

Lower elementary curricula add to the kindergarten program a certain amount of formal instruction—in the "three R's" and other subjects—and a more ambitious type of project; these replace, to some extent, parts of the kindergarten "play" program.

The play-class area is somewhat reduced in extent, and a definite project area is added. Depending on local requirements, the project area may be a separate workroom or an open alcove, or a combination of both. A bench with juvenile facilities for handicrafts, sink, and storage shelves are desirable. Direct access to segregated outdoor play space is often considered essential. A cloak alcove like that used in kindergartens is sometimes provided for lower grades; coat lockers sometimes line one wall; occasionally overclothing is stored in individual corridor lockers. Separate toilet rooms are required for boys and girls; these are sometimes provided within the unit, more often are centrally located to serve a group of units.

Upper elementary programs involve more searching inquiries and broader investigation. Experimentation, construction, general science, home arts, dramatization, folk-dancing, craftsmanship, industrial arts, and artistic expression have more definite places in curricula; close supervision over diet, rest, play, dressing, etc., ceases.

Definite workspace and equipment, recitation and study areas become essential. Direct access to outdoors, though sometimes desirable, is not essential. A platform which can serve as a stage may be required. Overclothing is stored in classroom wardrobes or individual corridor lockers.

High school curricula, though more formal than elementary programs, are constantly being expanded to permit laboratory methods of teaching. French is learned by games and dramatizations as well as by rote; English classics are related to mathematics by means of producing—actually editing and printing—a school paper. Industrial arts are often emphasized in order to relate modern civilization to traditional learning. Social, professional and vocational interests are stimulated; the individual student begins to specialize, or at least learns how to choose his life pursuit.

Here the "activity" classroom becomes several things as classes are specialized. It may be the recognized science suite (lecture room plus laboratory) or it may be a laboratory for general education, with class seating area, laboratory tables, small stage, and library-study space, all in one room. Occasionally this type of classroom is divisible into two or more spaces by folding partitions. Also, it is sometimes L-shaped in plan, to provide for segregating activities. Some authorities* suggest three different types of high school educational laboratories: *Recitation-discussion* (seating space, storage space, reading alcove); *Discussion-activity* (seating space, workroom, stage, study and reading alcove; *Experience program* (seating space, stage, exhibition and storage space, and separate though adjoining work centers with their own storage space).

*N. L. Engelhardt, Jr., and others

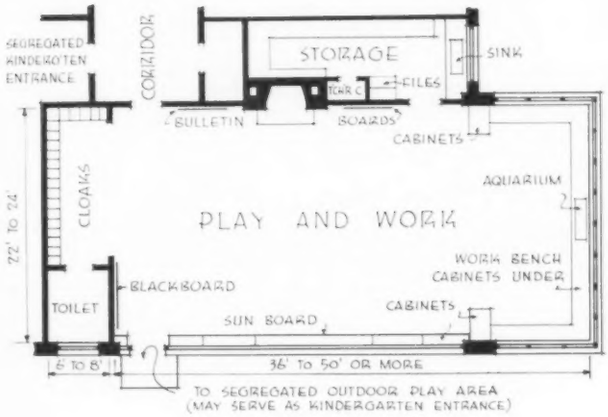
INDOOR SPACE REQUIREMENTS for ACTIVITY CLASSROOMS

(in square feet)

TYPE OF SPACE	KIND'G'T'N (20-25 pupils)			LOWER ELEM. (25-30 pupils)			UPPER ELEM. (35-40 pupils)			HIGH SCHOOL (35-40 pupils)		
	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†	Min.*	Avg.	Max.†
STUDY AND RECITATION	...	...	...	...	...	...	625	780	960	704	828	1200
Reading	...	...	...	...	...	...	64	100	176	64	100	176
Stage	...	...	...	...	...	...	140	252	352	140	252	352
Work	...	...	...	250	400	400	138	184	240	176	230	360
Play-Work	...	...	...	625	1200	1200	...	...	...	...	...	...
Play	625	1500	1500	...	...	...	...	...	...	...	...	...
REST AND ISOLATION	200	300	300	...	200**	...	...	...	...	...	...	...
CLOAKS	...	150	250	...	150	250	...	...	...	...	...	...
TOILET AND LAVATORY	80	108	160	...	80	...	...	...	...	...	...	...
STORAGE	...	48°	...	...	48°	...	200	320	400	200	320	400

*Desirable. †Usual. **See text. °For supplies and teacher's use; add 1.5 cu. ft. per pupil in play space, same amount in work space (average).

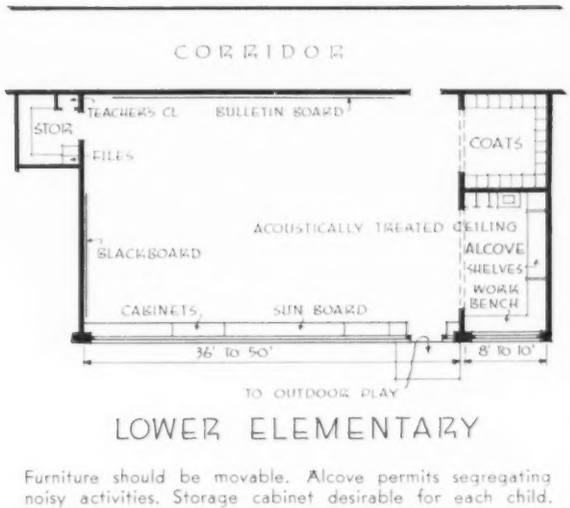
ACTIVITY CLASSROOM PLANNING



KINDERGARTEN

Design of playroom should permit activities to be segregated (bay windows, alcoves, etc.). Space for individual activity, with some privacy, may also be added. Furniture should be movable. Individual storage cabinets and overclothing cubicles, child height, are desirable.

Equipment includes: swings, slides, sand box, pool, box for toys, aquarium, work benches and juvenile tool sets, sink, easels, tables, chairs, piano.

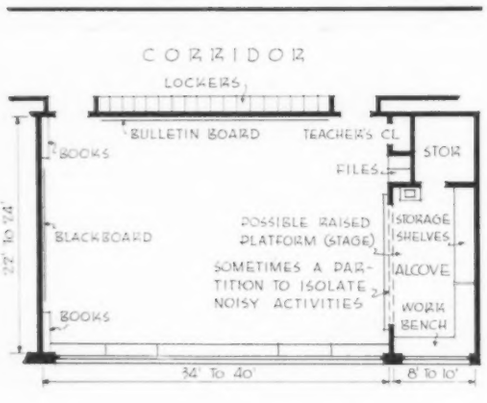


LOWER ELEMENTARY

Furniture should be movable. Alcove permits segregating noisy activities. Storage cabinet desirable for each child. Overclothing cubicles occasionally outside classroom.

Equipment includes: chairs, tables, work benches and tools, material cabinets, aquarium, easels, sink, piano.

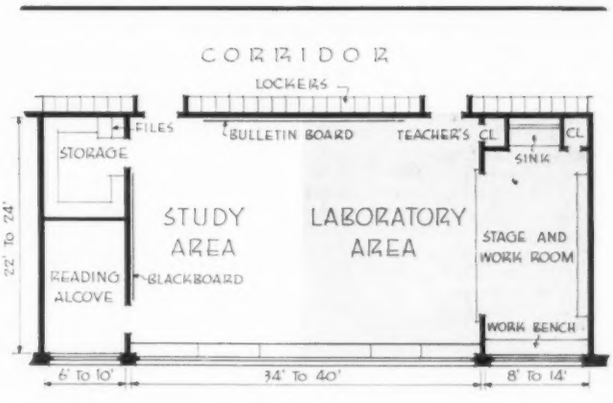
Plans are composites of numerous examples; all are restricted in dimensions by state educational building regulations. More advantageous shapes are occasionally possible. Drawings are not to scale.



UPPER ELEMENTARY

Furniture should be movable. Alcove is for experiments, is sometimes used as stage. One alcove often serves two classrooms. Clothing lockers sometimes open into room.

Equipment includes: chair-and-desk units (or chairs and tables), experiment table with acid-proof top, work bench, book shelves, sink, chart and map rack, motion-picture or lantern-slide projector.



HIGH SCHOOL

Shown is a "general education laboratory." Chair-and-desk units (movable) are used in study area; laboratory tables (4 seats each) in laboratory area. Room is sometimes L-shaped, sometimes subdivided by bookshelves, etc.

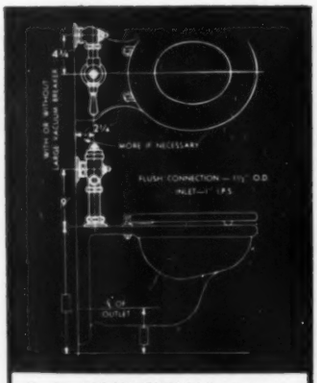
Other equipment includes: work benches, chart and map rack, motion-picture or lantern-slide projector, sink, storage cabinets.

For Schools

The new Chicago South Side Vocational School at 87th St. and Anthony Ave. is equipped with more than 150 Watrous Flush Valves. This school has been recently taken over by the United States Government for the training of several thousand naval aviation mechanics and workers in the rearmament industries.

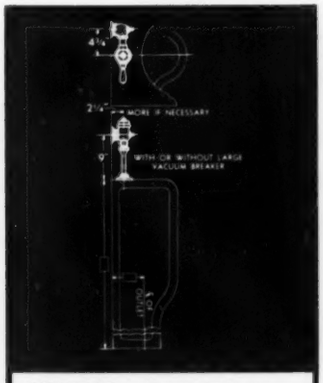
THE selection of Flush Valves for a new or modernized school is a very important detail and the more you study this feature of the sanitary facilities the more you will appreciate why Watrous Flush Valves will eliminate needless waste of water and reduce maintenance cost over the years.

Shown below are a few representative Watrous Flush Valve combinations frequently selected for modern schools. When you are preparing your plans and specifications you will find these combinations of interest. Details on these and other Watrous combinations available in Catalog 48, Section 27 of Sweet's Catalog File.



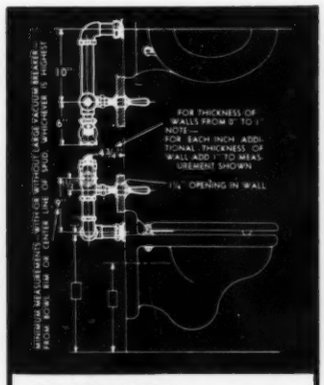
S. S. VOCATIONAL School, Chicago (shown above), uses this Watrous combination for top spud wall hung bowls. This type of installation is neat, efficient, easy to keep clean. Other users include: Wyandotte High School, Kansas City, Kan.; Northeast High School, Oklahoma City.

Specify: Watrous Comb. M-537-VB (for diaphragm type valves); Comb. M-637-VB (for piston type valves). These combinations include vacuum breakers; meet all code requirements.



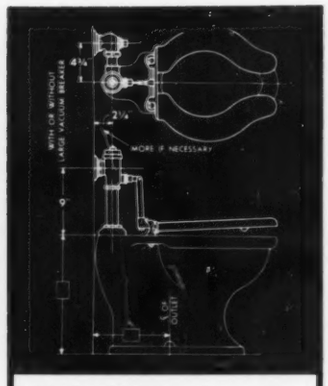
URINALS in South Side Vocational School (where hand operated) are equipped with this Watrous combination. Advantages include convenient flushing (promoting cleanliness) and unusual water economy. Among other users are: Sanford High School, Sanford, Me.; Grade and High School, Nunda, N. Y.

Specify: Watrous Comb. M-549 (for diaphragm type valves); Comb. M-649 (for piston type valves). Usually used without vacuum breaker.



NO CHANCE for tampering with flush valves in schools where this Watrous concealed combination is used. Nothing exposed except operating handle. Pulaski High School, Milwaukee, is one of the users of this Watrous combination.

Specify: Watrous Comb. M-539-VB (for diaphragm type valves); Comb. M-639-VB (for piston type valves). These combinations include vacuum breakers; meet all code requirements.



SEAT-ACTION flush valves are preferred by many for schools. They provide automatic operation — assure a clean bowl at all times. This Watrous combination used by Grade and High School, Ft. Plain, N. Y.; Grade and High School, Red Hook, N. Y.; and others.

Specify: Watrous Comb. M-582-VB (for diaphragm type valves); Comb. M-682-VB (for piston type valves). These combinations include vacuum breakers; meet all code requirements.

SILENT OPERATION adds very little to the cost of a flush valve installation and is another excellent refinement for the up-to-the-minute school. If you wish to use Watrous SILENT-ACTION Flush Valves, simply add "Silent-Action" after the combination number.

THE IMPERIAL BRASS MFG. CO., 1240 W. Harrison St., Chicago, Ill.

HERE ARE TWO REASONS WHY WATROUS FLUSH VALVES

1. **SAVE WATER.** A simple adjustment makes it possible to regulate any Watrous valve so minimum amount of water will be used for each fixture.

2. **ELIMINATE MAINTENANCE TROUBLES.** By-pass has patented, mechanically operated self-cleansing device which prevents clogging—keeps valve working properly.

Watrous Flush Valves

DIAPHRAGM and PISTON TYPES . . . also furnished with SILENT-ACTION equipment

NEWS OF MATERIALS AND EQUIPMENT

Figure 1

Heating Systems Prefabricated on Job

PREFABRICATION, in some form, has seemed for years a desideratum, yet a baffling problem, to manufacturers of heating systems. Now, in a New England real estate development, production line methods are being used to install 100 hot water heating systems. The heating contractor established a heating supplies warehouse and shop on the job, where all work preliminary to the actual installation is done. Sub-assemblies are put together and all pipe is cut to proper length and threaded. Material for the complete installation is taken to each home in a group for final assembly. Installation does not require cutting a single pipe or thread in the house. W. D. Aitken, Timken Silent Automatic dealer, Weymouth Landing, Mass. (See figure 1.)

Joint-Free Concrete Roadways

ORIGINALLY designed for road building, a new material is now figuring in the construction of runways in army and navy airfields as well as municipal and commercial airports. Known as premoulded bituminous fibre expansion joint, the product is said to eliminate extruding contraction and expansion joints between concrete sections and present a continuously smooth surface for fast-rolling wheels. It is made by saturating cane-fibre board with asphalt. The compressibility of the fibre board permits the concrete when hot to expand against it, and as cooling takes place the resilient fibre returns to its original thickness as the concrete recedes, keeping the joint tight at all times. Celotex Corporation, 919 N. Michigan Ave., Chicago, Illinois.

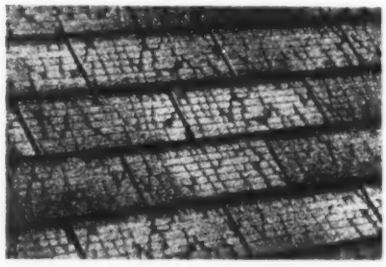


Figure 2

Weathered Effect in Asphalt Shingles

FAITHFUL reproduction of a weathered roof surface is claimed for a new asphalt roofing shingle. The rough and rugged effect is said to be obtained by a manufacturing process that builds up the surface in layers of asphalt and colored mineral granules, and by distribution of the granules to effect blends of green, blue, red or slate. Extra thick butts and built-in shadow lines accent the surface texture. Advantage claimed are durability, due to extra thickness, fire resistance and moderate cost. The Ruberoid Co., 500 Fifth Ave., New York City. (See figure 2.)

Patching Compound for Cement Floors

OVER-NIGHT repairs can be made on cement floors through the use of a new cementitious material which is said to make a non-shrinking, tightly adherent patch and to set so quickly the floor can be used for light traffic next morning. The Truscon Laboratories, Inc., Detroit, Mich.

Ammonia Compressor "Revolutionary"

ANNOUNCED as one of the most revolutionary changes of style in the history of ice making and meat packing, a new ammonia compressor is introduced. Development since this manufacturer put out his first ammonia compressors in 1885 is contained in the statement that the new model operates 21 times as fast as the first machine and occupies 1/60 of the space, with the same capacity. The new compressor has water-jacketed heads, has been statically and dynamically balanced to cut noise and vibration. Heavy foundations have been eliminated. Every wearing part is replaceable and all parts are said to be easily accessible. The machine can be mounted in spots usually avoided by refrigerating engineers, such as roofs, extra storage rooms, etc. York Ice Machinery Corporation, York, Pa.

New Furniture Pieces

A SERIES of new furniture pieces includes a chair with resilient side frames constructed of wood veneer laminated into a continuous curve. Contour seat and back of reinforced unit construction are bolted to side frames at four points and the fabrics are upholstered on rubber cushioning. Colorflex, 1159 Second Ave., New York City. (See figure 3.)

(*Continued on page* 110)

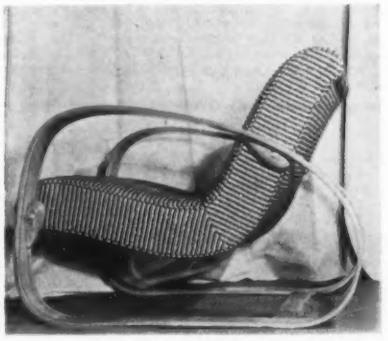


Figure 3

TO YOU...

because you are an American Architect

YOU'RE busy these days . . . busier than you've been for a long time. Busy building a new America. That is why this letter is addressed to you now. It takes you quickly back over the past decade. *During that time, Lockwood has introduced more new ideas and improvements into builders' hardware than has any other manufacturer.* Have you realized that?

PATRICIAN

In the Patrician line, Lockwood was first to combine modern plastics in builders' hardware — first to make practical use of color plastics in this field. In Polyflex, Lockwood gave you a practical metal knob body with interchangeable tops, both in metal and color plastic. That was a big step forward in simplification and decoration of modern interiors.

POLYFLEX

Lockwood standardized a modern line of cylinder mortise locks for you and catalogued them so clearly and compactly that you can cut hours — literally! — from your reference time. In Equipoise, Lockwood produced a superb lock action, perfectly balanced in either direction of turn. Lockwood developed Bor-loc* — a tubular mortise latch that is inexpensive and can be installed in a fraction of the usual time.

MORTISE LOCK

BOR-LOC

Lockwood solved your problem of sectional trim for mortise locks in modern thin doors with Unifast — a combined rose and key plate that is fastened to the lock body itself with a single recessed head machine screw, requiring no wood screws at all. In Cape Cod, Lockwood brought traditional thumb latches with modern lock actions within reach of the small early American and Colonial home.

The Super Closer, developed by Lockwood, is the first liquid-type door closer with full ball bearing action and leak-proof gland. It has changed the door closer into a *precision* machine!

* * *

UNIFAST

But more than a review of the past, this is a promise to you *now*, that Lockwood will continue to offer new and useful developments in builders' hardware — constantly and as fast as they have been proved, by thorough test, to be practical.

CAPE COD

Lockwood is your line — lock, stock and barrel! It is built and catalogued and sold so that you can use Lockwood products easily and definitely; so that you are supplied with exactly what you recommend.

And it is built to give your clientele the soundest sort of *value*. That word is tossed around a little sometimes; maybe it can stand defining. To us it means that your client must get something more than dollar-for-dollar on his investment; that he must be satisfied thoroughly in quality and in service; that Lockwood in his home makes it a pleasanter place in which to live!

SUPER CLOSER

Write in for further information on any and all Lockwood lines. We will send it gladly, together with names of competent Lockwood dealers located near you. We should like you to feel that you can call on us for any assistance you think we can render!

*BOR-LOC — Reg. U. S. Pat. Off.

LOCKWOOD

LOCKWOOD HARDWARE MFG. COMPANY

Division of Independent Lock Company

FITCHBURG, MASSACHUSETTS

ARCHITECTURE

. . . AND PRACTICING ARCHITECTS AIR THEIR VIEWS

☆ **It is certainly not the purpose of these pages to instruct advertising agencies in the art of advertising. As one contributor pointed out, such a presumption would be just about as foolish as to suppose that advertising men might show architects how to build houses.**

But while advertising procedure is based on sound and firmly established fundamentals, those who create advertising must nevertheless keep their fingers on the pulse of their audience. By market studies, copy testing, scientific research and other expedients, they strive to find the key to that approach which holds the readers' attention. Such constructive criticism as is found here will contribute in large measure.

Just as a client's complete expression of his requirements enables the architect to provide a better structure, so is the advertising agency in a better position to make advertising more useful when the architect becomes vocal in his reactions to it. And, though the final test of good advertising may be in dollar-and-cents results, success can often be assured by the careful sampling of reader reaction. What architect would want to complete a building without the step-by-step approval of the client as the construction progresses?

Architecture and advertising are both moving forward at a rapid pace. A more complex living, a broader scope of operation and greater responsibilities find the architect leaning with increasing dependence on the manufacturers and the advertising which represents them. The reaction of architects is necessary if there is to be achieved that type of informative advertising professional practice requires.

—RONALD ALLWORK

AN ADVERTISING AGENCY WANTS TO KNOW . . . !

1. How do you as an architect feel about "Case History" advertisements which tell how some particular architectural problem was solved through the use of the product advertised?

2. Do you like to see detail drawings showing some specific application included as part of an advertisement of a product?

?

We'd like to publish representative answers to these questions. Send in your comments for publication in the July issue. Limit your copy to approximately 200 words; and please remember that for lack of space we may have to withhold publication or omit portions. First come—first published!

Conrett, Fed. Adv. Ag'y.

Readers of last month's RECORD were invited to vote on the headline (illustrated in the sketches above) which they felt would most effectively capture and hold the interest of the architect. What they had to say in answer will be found in the comments on these pages.

VAHAN HAGOPIAN, AIA

"Complimenting you for a worthwhile effort . . ."

WHILE I APPRECIATE the importance of economy and speed in construction, I find in two of the layouts only a mere unsupported statement that the product meets these conditions but fails to acquaint me in any way with the product, except that it is another wallboard. Why is it better than those already on the market? As to the testimonial stuff, I feel this has been overdone and may be out of place.

As far as the illustration showing a man carrying a wallboard, I find nothing in it to excite the architect and invite him to pause on this hypothetic ad. Assuming it is carried out to completion, the manufacturer may feel better if a beaming expression is put on the face of the workman. You know, something like the one on the pretty housewife in a grocery store holding a can of peas she is to fall for! However, I doubt that a single architect exists with a sufficiently arrested mentality to be thus impressed!

I realize my criticism so far is not constructive. Therefore, complimenting you for a worthwhile effort you are doing in the right direction, I wish to suggest that advertisers read carefully, for their well-taken points,

MEETS ADVERTISING

ON THE TYPE OF ADVERTISING THAT WILL BE MOST USEFUL TO THEM

the most interesting letters you have published.

As far as I am concerned, I am glad to see in them the confirmation of the philosophy I follow in the preparation of illustrations for manufacturers' advertisements to architects and builders, and which takes a good deal of my time.

Such ads should be prepared by advertisers and artists who know the architects' minds intimately if they are not or have not been architects themselves. It should be also remembered that a certain product may not, at the time the ad appears, be needed by the architect who sees it. In this case, no matter how interesting the message, the architect will not scrutinize it. Remembering the Chinese proverb, let the picture, "which is worth a thousand words," do the job of drawing attention and creating an impression, by an appeal to the architect's mental mechanism, without attempting to tell all in one ad. Sweet's Catalog will obligingly do that at the proper time if the architect will remember the product.

GEORGE WALLACE CARR, AIA

"*. . . I should respond to the third.*"

IF I KNEW about Fibre-tex I should respond to the third—I would already know what users say—and some new technique that speeded up the job might produce a saving.

RALPH AUBREY JEFFERS, AIA

"*. . . my reason is obvious.*"

MY VOTE is for No. 1. Reason—*Any* wallboard is used for reasons of economy, hence my reason is obvious.

OWEN A. LUCKENBACH, AIA

"*. . . check the third . . .*"

THE ADVERTISING MANAGER should ask for new copy. First and third ads limit the appeal to those who want to save or build faster, and the second has a patent medicine feeling. For a vote, check the third, it has today's appeal.

HORACE WHITNEY WACHTER, AIA

"*My choice is No. 1 . . .*"

MY CHOICE is No. 1 because "Save" is the predominate effort of people in these times.

PAUL THIRY, AIA

"*I would like to have the pleasure of deciding . . .*"

WHEREIN does the choice lie? All three captions say different things. When I read them they bring to my mind "Save over what?" "Faster than what?" "What do users say about other wallboards and what do they say against Fibre-tex?"

I dislike advertising that attempts to tell me what to think. The form of advertising that best appeals to me eliminates all catch titles and is confined to humble facts. The architect must be the judge of the merits of a product and his judgment must be based on the merits of the problem to be solved. The architect best judges the merits of a product in direct relationship to his knowledge of all products obtainable.

In my opinion the advertising caption for Fibre-tex could well be: "Wallboard by Fibre-tex" followed by a truthful statement of facts and without comparisons.

I would like to have the pleasure of deciding whether it's cheaper or faster. I would like to feel that I had discovered Fibre-tex.

ROY MAYNARD LYNDON, AIA

"*. . . looks for integrated and well-presented information.*"

FRANKLY, I doubt if any of the three captions would capture the interest of most architects. *First*, "saving" with a product is never convincing until the actual cost of installation on the job can be accurately compared with other materials and seldom does national advertising penetrate the field of actual cost figures. *Second*, "what users say" is a follow-up thought process which is of little value unless one has already decided to *consider* a product. In a product like wallboard the user should only be aware of its faults and probably such reports would not be published. The *third* has a little more attention value, because it suggests something of *how* Fibre-tex can be used and what its *qualities* are. I believe the architect looks for integrated and well-presented *information*.

LAWRENCE B. PERKINS, AIA

"*For No. 3 with no conviction.*"

REACTIONS—

1. "*Save!*" Save what? in comparison to what? How are you going to arrive at a quantitative answer?—This one seems like layman "sucker" advertising—not interested!
2. I don't know these *users*—Why are they different from the people who can always be found to beam approval of coffee percolators, tooth paste, streamline trains—et al?
3. "*Faster*"—Well, maybe they have an idea—I'll read one more line and see if it is just another statement that dry construction is faster than plaster—or something.

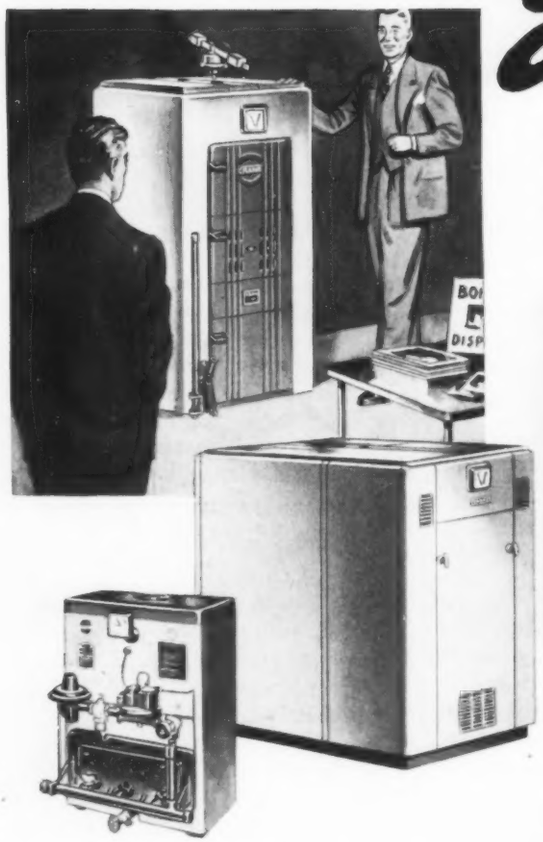
I vote for No. 3 with no conviction. Suggest—"Here is a board which is superior to its competitors—Do these advantages give *you* any ideas, Mr. Cocksure Architect?"

M. H. FURBRINGER, FAIA

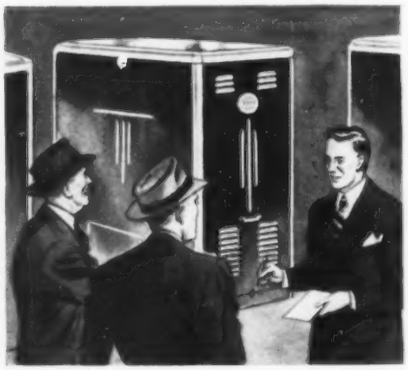
"*Who uses it and why?*"

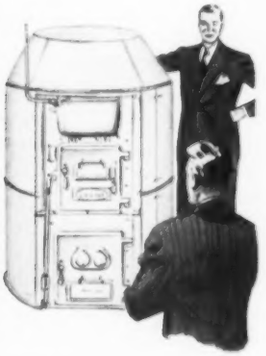
THE caption "What users say about Fibre-Tex" would attract my attention first and hold my interest longest, for the reason that I want to know who uses various products and why.

HEATING'S EASY TO CHOOSE FROM THE LINE THAT HAS *Everything*



● It's easy to choose exactly the right heating system for any house from the Complete Crane Line—for the Crane Line has *everything in heating* . . . radiators and convectors, boilers and furnaces, burners for every fuel, automatic or hand-fired equipment for every need and purse . . . all backed by Crane's reputation for engineering excellence.



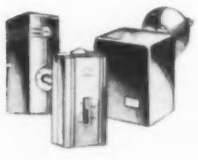


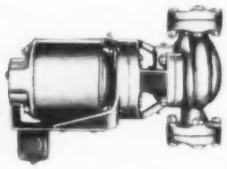
FURNACES FOR WARM AIR HEATING

Crane offers warm air furnaces to meet every need—for both gravity and forced circulation—in hand, stoker, oil and gas fired models.

BOILERS FOR STEAM AND HOT WATER

The complete line of Crane boilers for steam and hot water systems includes types to burn any fuel, for manual or automatic firing.



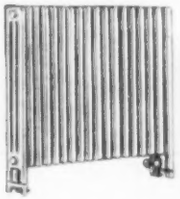


CONTROLS AND SPECIALTIES

Controls for heating are of major importance to the architect—and Crane furnishes accurately made, efficient controls that operate instantly and require minimum attention.

RADIATORS AND CONVECTORS

Crane *Compac* radiators may be installed free standing or recessed, with or without panels. Convectors are available in sizes and styles for any installation.



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VALVES AND FITTINGS

The Crane heating line is complete down to the valves and fittings—assuring economical functioning of the entire system.

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CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

New Building "DESIGNED FOR DAYLIGHT" ...with PC Glass Blocks

THE GENEROUS USE of PC Glass Blocks by Architect Charles F. Owsley in this new Isaly Dairy Company building in Youngstown, Ohio, has resulted in a building really "designed for daylight." Notice how greatly the panels of glass blocks add to the exterior appearance of the building.

THE ASSEMBLY ROOM derives three advantages from its PC Glass Block panels. Plenty of cheerful daylight. Privacy from distracting outside views. And greater freedom from noise . . . because glass block panels deaden outside sounds.

THE RECEPTION LOBBY gains in appearance as well as daylight by virtue of ceiling-height panels of PC Glass Blocks. These panels have twice the insulation value of ordinary windows . . . make rooms easier to heat, cut fuel bills.

PRIVACY AND PLENTY OF DAYLIGHT characterize this accounting office. Panels of PC Glass Blocks make the room a bright and cheerful place to work.

PC GLASS BLOCKS are being used more widely every day by architects who desire one or all of the many advantages glass blocks contribute to modern construction. Generous transmission of daylight, while guarding privacy. Reduction of heating, cleaning, maintenance, and lighting costs. Insulation against sound. And smart good looks. There are three sizes and eight patterns of PC Glass Blocks. Send coupon for free book of information.

"PITTSBURGH" stands for Quality Glass

PITTSBURGH PC CORNING

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

Pittsburgh Corning Corporation,
2093-1 Grant Building, Pittsburgh, Pa.

Please send me, without obligation, your free, illustrated booklet "The Use of PC Glass Blocks in Commercial and Public Buildings."

Name .....

Address .....

City ..... State .....

(Continued from page 104)

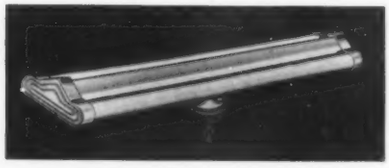


Figure 4

Kitchen Fluorescent

FOR FLUORESCENT lighting in the kitchen there is a new fixture that uses two T-12 20-watt 24-in. lamps and has fitters for attachment to any 4- or 6-in. holder. The reflector is finished in durable gloss white enamel. Operation on 110 to 125 volts, 60 cycle, A.C. current. Mitchell Manufacturing Company, 2525 Clybourn Ave., Chicago, Ill. (See figure 4.)

and performs a dozen other cleaning operations better and faster than any other method.

SPENCER VACUUM CLEANING

The speed of cleaning large areas, its usefulness in the gymnasium, auditorium, stairs and hallways, and the fact that it can be operated in the halls while classes are in session are valuable advantages.

It is ideal for bare floors, and will clean and polish linoleum and composition floors with a few easy strokes of the fast moving vacuum tool. It saves on the cost of sweeping compounds, floor oils and wax. It makes rugs and carpets last longer and look better.

Withal, it saves money—both by its speed and better cleaning and where hand methods are impossible. Used to clean boiler tubes and air filters, it has frequently saved its cost in a few years.

Ask for the new Spencer Bulletin on Commercial Vacuum Cleaning. Shows how it is used, what it saves. Ask for Bulletin No. 121-R.

S-207-C

SPENCER HARTFORD CENTRAL AND PORTABLE VACUUM CLEANING SYSTEMS

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

Creep-Resistant Lead Roofing

A SOLUTION to the problem of creep in planning lead roofs, especially for steep pitches, is presented in the guise of a new lead roofing sheet for which advantages of light weight, great tensile strength, low installation cost and a resistance to creep more than 10 times that of soft lead are claimed. The creep strength is said to change very little between 80 and 180 degrees F. The manufacturer points out that while the product is priced higher than ordinary lead, material cost for a job is smaller, due to lower lead content per sq. ft. It is also claimed that roof bracing designed for smaller dead loads can be used. Sheets are 30 in. by 96 in. and weigh approximately 40 lbs. Revere Copper and Brass Incorporated, 230 Park Ave., N. Y. C.

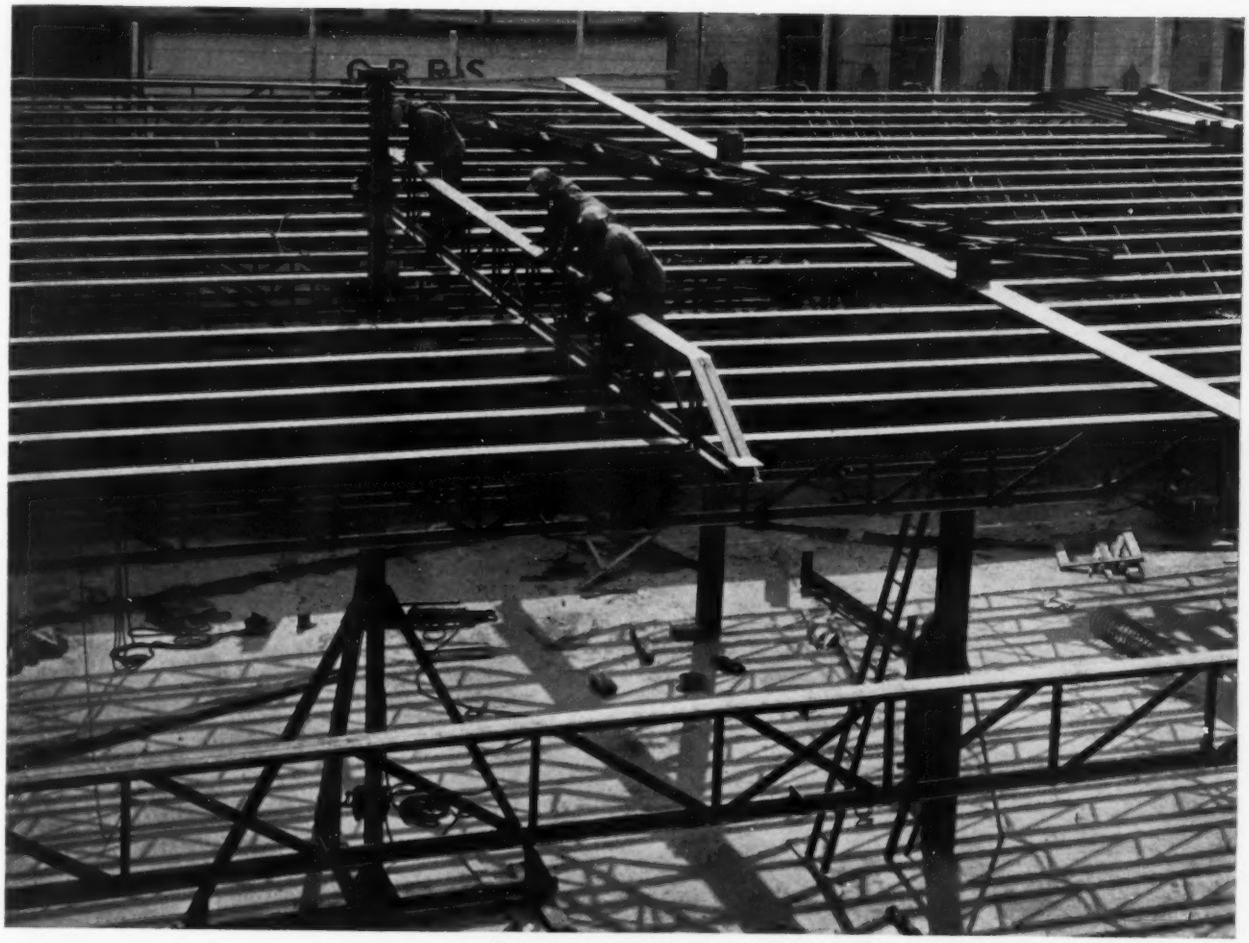
New Wood Siding Nails

A NEW NAIL claimed to be non-loosening and permanently rustproof has been introduced for wood siding. The nail carries a series of raised retaining rings on the shank, which imbed themselves in the wood and step up the holding power. A checkered head provides a bond for painting, and the nail has been given a heavy zinc coating to protect the nail, prevent rust streaks and preserve the surrounding wood. W. H. Maze Company, Peru, Ill.

Gas Outlet Box and Safety Shut-Off

JUST ON THE MARKET is a combination gas outlet box and safety shut-off valve, in a steel housing, to be built into the wall. This device is designed to make it possible to connect up space heaters and other gas appliances somewhat as one plugs in an electric device. There is a hinged cover over the connection, and a patented lock prevents the gas from being turned on accidentally. The finish is walnut or ivory. Imperial Brass Manufacturing Co., 1200 West Harrison St., Chicago, Ill.

(Continued on page 112)



New store of big variety chain being speedily erected with Bethlehem Longspan Joists. These joists can provide a clear floor space up to 64 feet with unusual economy.

For longer spans at lower cost . . .

BETHLEHEM LONGSPAN JOISTS

Specifying Bethlehem Open-Web Longspan Joists makes possible spans up to and over 64 feet without columns, and eliminates the need for awkward pilasters. And, while making possible these longer spans, it enables you to keep construction costs low.

Bethlehem Open-Web Longspan Joists are quickly and easily placed with the aid of a gin pole. No falsework is needed. They are completely shop-fabricated and are clearly marked to speed up placing.

In addition, Bethlehem Longspan Joists form the basis for fire-safe construction when they are used in combination with a concrete slab and a plaster ceiling.

Get the complete facts on Bethlehem Open-Web Longspan Joists and their use for floors and roofs in all types of light-occupancy structures. There is no obligation. Write Bethlehem Steel Company, Bethlehem, Pa., for Catalog 150. It will prove a worthwhile addition to your files.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

(Continued from page 110)

Fashion Veers to Weather Vanes

THREE weathervanes, "rugged but inexpensive," have been introduced. Number one screws into a flat end-flange and is made primarily for flagpoles or projections with a flat surface; stands 14 in. high. Number two—18 in.—and Number three—24 in.—are for installation on ridge or hip ends and can be cut to accommodate any roof pitch. All have solid steel shafts floating on a ball-bearing pivot and grease-lubricated, which makes the vane responsive to slightest breezes. Aluminum painted. Milcor Steel Co., Milwaukee, Wis.

Aluminum Bathroom Cabinets

ALUMINUM bathroom cabinets which, according to their manufacturer, will not chip, crack, craze, discolor or become ingrained with dust are now offered in four models. Two have mirrors framed in polished stainless steel; 2 have all-mirror fronts. Tubular and fluorescent lighting fixtures are included, also an interior light which serves as a night light. Miami Cabinet Division, The Philip Carey Co., Middletown, Ohio.

Rust Protection for Steel Windows

PERMANENT rust protection for steel sash parts embedded in masonry walls is provided by a new asphalt-impregnated cotton envelope. The envelope is applied (by means of a brushed-on liquid bonder) over the edges of the steel sash which are to be concealed in the wall. A V-shaped recess in the envelope permits expansion and other slight movement of the sash and prevents bulging of the sash due to lintel deflection or normal building settlement. The use of this seal, the manufacturer reports, will protect hidden portions of steel sash indefinitely. Seal-O-Sash Company, 48 Herkimer Pl., Brooklyn, N. Y.

Diffusing Strips for Fluorescents

RECENTLY DEVELOPED is a plastic strip that clamps on 1½-in. fluorescent lamps in open type fixtures to diffuse the illumination. The manufacturer recommends white strips for eye ease with general illumination, yellow strips for white lamps and pink strips with daylight lamps. Strips are 12 in. and 24 in. Edwin F. Guth Company, 2615 Washington Ave., St. Louis, Mo.

A Thicker Balsam Wool

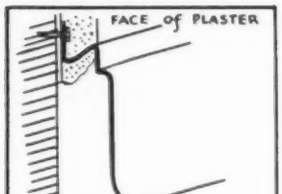
GREATER EFFICIENCY, greater thickness, greater moisture protection are claimed for a new balsam wool. The product is available in standard and double thickness, in widths to fit 16- and 24-in. framing members. The standard blanket has two individual moisture barriers, the double-thick, three. Wood Conversion Company, Saint Paul, Minn.

KNAPP METAL TRIM

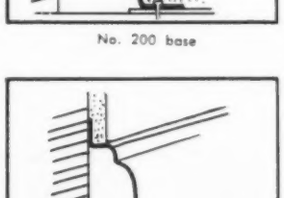
CLEAN, SAFE, and DURABLE

LONG LIFE and trouble-free maintenance—in schools, and other public institutions — are more easily attained with Knapp metal trim. Its smooth surface cleans readily *and stays clean longer*. All Knapp metal trim is fireproof and conforms with specifications for fire-resistant structures. Its rugged durability and easy upkeep means long term economy. Its clean-cut graceful lines add beauty to the simplicity of modern design.

Let us send you a complete set of details for the entire Knapp line.



No. 200 base



No. 301 chair rail

FOR FURTHER INFORMATION

SEE OUR CATALOG IN SWEET'S

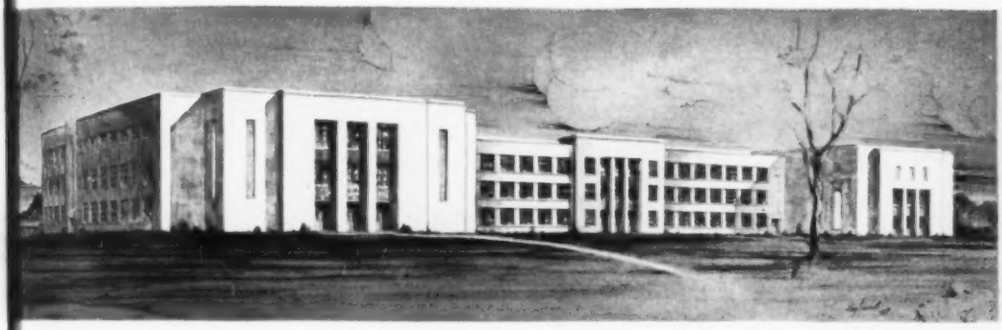
The Knapp Quality line includes: window and door trim • window stools • base • chair rails • blackboard trim and chalk trough • picture moulds • corner beads • grounds • screeds • and many other kindred products.

KNAPP METAL TRIM

KNAPP BROS · MANUFACTURING CO·
GENERAL OFFICES · JOLIET, ILLINOIS

West Side Senior High School, Rockford, Ill. Protected with 94,000 sq. ft. Ruberoid Bonded Coal Tar Pitch and Felt Built-up Roofing, Gravel finish. *Architect:* Gilbert A. Johnson, Rockford, Ill. *General Contractor:* Charles B. Johnson & Son, Chicago, Ill. *Approved Roofing Contractor:* David Carlson Roofing Co., Rockford, Ill.

ROCKFORD builds 3 new schools . . . Result: 3 new RU-BER-OID roofs!



East Side Senior High School, Rockford, Ill. Protected with 87,000 sq. ft. Ruberoid Bonded Coal Tar Pitch and Felt Built-up Roofing, Gravel finish. *Architect:* Gilbert A. Johnson, Rockford, Ill. *General Contractor:* U. S. Fireproofing Co., Chicago, Ill. *Approved Roofing Contractor:* David Carlson Roofing Co., Rockford, Ill.

Rockford, Illinois—famous city of machine tools, fine furniture and splendid schools!

In 1940, Rockford built three new high schools. All are protected with Ruberoid built-up roofs.

This is a tribute to Ruberoid's reputation for quality. When buildings are planned with architectural care, and products selected with discrimination, Ruberoid roofs are invariably used. In American cities and towns the country over, many of the finest public and private buildings—schools, hospitals, apartments and industrial plants—are roofed with Ruberoid.

The flexibility of RU-BER-OID Built-up Roof Specifications enables architects to *custom-build* each roof to meet specific needs. Ruberoid makes all three major types of built-up roofs: (1) Asbestos, (2) Asphalt and (3) Coal Tar Pitch and Felt. Architects can choose not only the type, but the specifications best fitted for each job to meet problems caused by climate, fumes, fire hazards, etc.

Among RU-BER-OID's Built-up Roofing specifications are roofs which, when applied by approved roofing contractors, may be bonded for 10, 15 or 20 years—bonded for both materials and workmanship. Contractors are selected with care, so that the workmanship may be in keeping with Ruberoid quality.

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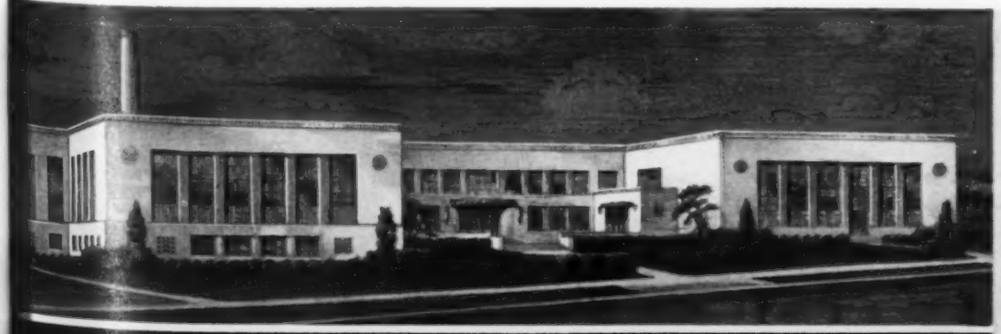
Each year, a greater number of architects permit The Ruberoid Co. to work with them on their roofing problems. We invite your inquiry. For specifications, consult Sweet's, or write us on your letterhead . . . Address Dept. AR-6, The Ruberoid Co., *Executive Offices:* 500 Fifth Avenue, New York, N. Y.

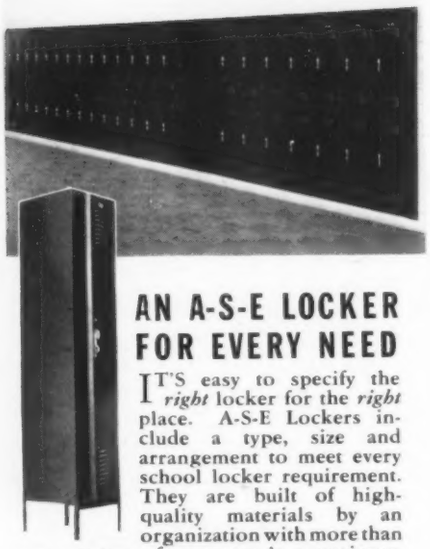


South Side Junior High School, Rockford, Ill. Protected with 35,000 sq. ft. Ruberoid Bonded Coal Tar Pitch and Felt Built-up Roofing, Gravel finish. *Architect:* Gilbert A. Johnson, Rockford, Ill. *General Contractor:* Sjostrom & Sons, Rockford, Ill. *Approved Roofing Contractor:* David Carlson Roofing Co., Rockford, Ill.

RU-BER-OID

ROOFING AND BUILDING PRODUCTS

Reg U.S. Pat. Off.



AN A-S-E LOCKER FOR EVERY NEED

IT'S easy to specify the *right* locker for the *right* place. A-S-E Lockers include a type, size and arrangement to meet every school locker requirement. They are built of high-quality materials by an organization with more than a quarter of a century's experience. A-S-E Lockers have the stamina to withstand hard use—reinforced wherever wear or damage might occur. They are being used effectively in hundreds of school and industrial buildings throughout the country.

Let us send you a copy of the new catalog. It will be helpful in determining the most practical type and arrangement for your client's needs. Write for it today — there is no obligation.

A-S-E 54-INCH HIGH WALL-ROBES FOR ELEMENTARY SCHOOLS

The A-S-E Wall-Robe is made 54 inches low — is properly designed for primary grade rooms. For the middle and upper grades, 60-inch high Wall-Robes are available.

Doors operate independently — yet locking is controlled by one master lock at the end units. Teachers' and storage units are included in the complete units. They can be installed in new or existing buildings, economically, quickly.

Write for complete information.

STEEL LOCKERS

ALL-STEEL-EQUIP COMPANY
INCORPORATED
306 KENSINGTON AVE.
AURORA • ILLINOIS

A I A CONVENTION

(Continued from page 40)

which have a particularly important bearing on future building activity.

Commenting specifically on defense construction, he said, "This first program of defense construction, plus Federal-aided industrial plant expansion projects, is tending to taper off shortly. Without additional appropriations, the volume of that kind of work in the latter part of this year will be very small. There are supplemental programs now under serious consideration in Washington and there is likely to be a sizable new program of cantonment building with $800,000,000 as the figure that has been mentioned. Furthermore, there are more Federal loans in prospect for industrial plant expansion. It is entirely possible that another supplementary program of construction might be called for next year."

Commenting on costs, Mr. Holden said, "The cost of the small frame house has risen nine to ten per cent. In view of the fact that the demand is continuing, I think we may say that costs have not yet risen to the point of discouraging private building and that thus far we have nothing to fear from that score."

Optimistic on priorities

As to priorities on materials, Mr. Holden was optimistic. "I think there are four considerations," he said. "The first is the attitude shown by the priority section of the OPM. This has applied only to critical materials, some of which are used in building. A number are now under some form of restriction, priority or allocation. This has applied principally to metals and is a condition that we will have to check very carefully from time to time to be sure that any metal products needed for building will be available.

"The type of priority order that was put into effect in late 1917 said that no private project over $25,000 could be built without a certificate of necessity. Because that order was put in effect in 1917, many people seem to think a similar order will be inevitable this time. I seriously question whether that priority order of December 1917 had any particular effect on the market. By the time that priority ruling was made, building costs had risen to such a point that the private market was almost non-existent. I think there is a very strong chance that the 1917 type of priority order will be avoided."

Referring to the future, Mr. Holden said, "Many people are going on the assumption that peace may come suddenly and that we may do as we did last time. I think it is a great mistake to believe that we are going to follow the pattern of the last war. There are many differences in the war itself, in the type of things needed, the amount of war that goes on in the factory as compared to that which goes on in the field. The fact that there is much more information about our economic system and our current business activities available to us now than there was the last time creates the possibility of more efficient controls and procedures.

"We do not need to accept without question the notion that the building industry must have an extended period of comparative idleness."

Mr. Holden asserted that an adequate solution of the post-war emergency problem can be achieved only by increasing the effectiveness of our long-range planning. He advocated that architects and other business groups give serious thought to plans for meeting the post-war emergency situation and urged Institute members to study carefully and act upon the report of the National Resources Planning Board which was transmitted to the President and Congress as a recommended basis for constructive legislation. Mr. Holden particularly urged upon Institute delegates the need for developing more adequate methods of financing needed construction and thus creating local opportunities for various types of improvement or rehabilitation projects.

As of first importance, he suggested that architects interest themselves in ways and means of simplifying the general tax pattern and in sponsoring legislation for sound financing of local public improvement projects and for creating opportunities for private enterprise to function creatively in the great post-emergency program of city rebuilding. He commented upon the movement sponsored by the National Conference of Real Estate Taxpayers to establish a National Tax Commission and outlined briefly the provisions of the newly passed Urban Redevelopment Corporations Law of New York State.

(Continued on page 116)

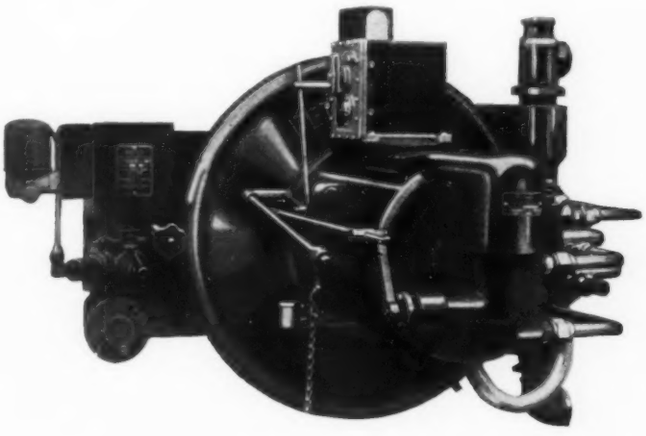
An Architect discusses

Equipment Performance and
Organization Service in

OIL HEATING SYSTEMS

George Kosmak, A.I.A., is designer of commercial and institutional buildings, as well as residences and small homes. His experience as an architect extends from the Rocky Mountain States to New England and the South. His office is in New York City. He says this of Oil Buring Systems:

"In planning oil heating systems I am principally interested in performance. I have found that skillfully manufactured equipment definitely lowers operating costs. Petro's economy record is only one of the reasons I use their equipment. I have found a complete and willing service from their organization that helps me and in turn satisfies the client. It's after a job is in operation that the Architect's choice is really appreciated, and service accomplishes this. In my experience the Petro Oil Burning System gives a consistently fine performance over a period of years, is dependable and easy to operate."



The "consistently fine performance" which Mr. Kosmak reports in Petro systems is achieved and maintained by definite fundamentals. These fundamentals are familiar to those who have had experience with Petro and are at least understandable without that experience.

Nearly forty years of concentrated continuing development underlies Petro's basic soundness of design and skill in precision manufacture. This experience has developed a variety of highly efficient equipment broad enough to provide exactly correct application to a wide range of firing needs and fuel oils.

A third performance-factor is the installation engineering which insures maximum benefit from proper selection of properly made equipment. This engineering is as much a part of a Petro System as the burner itself.

Mr. Kosmak points out that he values these factors even though his experience has made him familiar with oil firing systems. Their value to anyone less experienced would seem even greater.

CAPACITIES: to 145 gal. per hr.—487 boiler h.p.—68,000 sq. ft. steam E.D.R.

FOR FURTHER INFORMATION
SEE OUR CATALOG IN SWEET'S

Petro Industrial Burners for Automatic operation with preheated No. 6 oil, or with No. 5 or lighter oils, are available in eight sizes, Models W-2½ to W-9 inclusive. Each burner is a self contained assembly of motor, fan, pump, rotary cup atomizer and interlocked air and oil adjustments, except W-9, which requires separate pump.

In the use of preheated No. 6 oil, the Petro Thermal Viscosity System is an integral part of a Petro installation, insuring reliability of operation and fuel economy.

Semi-Automatic and Manually controlled Model W Burners and "Mechanical" type units are also available to meet circumstances which do not require automatic operation.

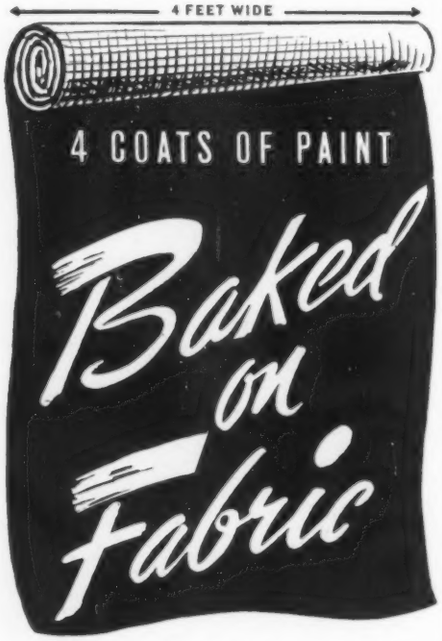
To the Architect in domestic building, Petro offers a complete line of burners for use with existing heating plants and complete oil fired boilers and winter air conditioners.

Petro's Engineering Division will gladly answer questions. The Petro Industrial Equipment Catalog will be sent promptly on request.

PETRO
Cuts Steam Costs

PETROLEUM HEAT AND POWER COMPANY

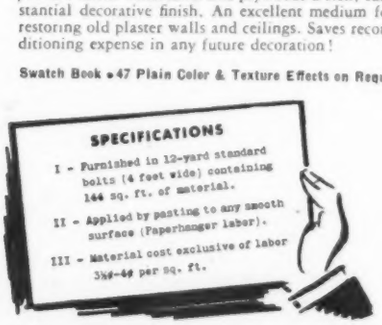
STAMFORD *—Makers of good Oil Burning Equipment since 1903—* CONNECTICUT



RESULT: Equivalent to brushing three coats of finest paint on a previously canvassed surface.

ADVANTAGES: Provides permanently washable, abuse-resistant surface designed for minimum maintenance cost over long-term period. *Puts a tough hide on plaster.* Gives wallboards and plywoods a rich, substantial decorative finish. An excellent medium for restoring old plaster walls and ceilings. Saves reconditioning expense in any future decoration!

Swatch Book • 47 Plain Color & Texture Effects on Request


SPECIFICATIONS
I - Furnished in 12-yard standard bolts (4 feet wide) containing 144 sq. ft. of material.
II - Applied by pasting to any smooth surface (Paperhanger labor).
III - Material cost exclusive of labor 3½-4¢ per sq. ft.

UNIQUE MULTI-LAYER CONSTRUCTION

A graphic presentation of the reasons why Sanitas *protects while it decorates* is offered by the Sanitas X-Ray. This little gadget shows by means of fabric samples how five successive processing steps . . .

1. **Start with a strong fabric base**
2. **Impregnate it**
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5. **Finally give it decorative character**

The Sanitas X-Ray and Data Sheets will be sent on request. The coupon is for your convenience.

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DUAL-FUNCTION
FABRIC WALL COVERING

PROTECTS WHILE IT DECORATES

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☐ Send Data Sheets and Sanitas X-Ray
☐ Swatch Book • 47 Plain Colors and Texture Effects
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_____
_____
_____

A I A CONVENTION

(*Continued from page 114*)

Mr. Holden closed his address on a note of constructive optimism.

"I think that we of the United States are now having our second chance. Twenty-two years ago circumstances made us the most powerful nation in the world. We did not wish to assume that responsibility. We said, 'Let's go back to normalcy.' We tried to achieve our destiny by running away from it. The postman is ringing twice; this time I think we have to meet our responsibility.

"The past is only a prologue. Before anyone could build the Boulder Dam our grandfathers had to build the Santa Fe Railroad and the Union Pacific. They built those railroads so that we could have Boulder Dam now. They spent some toil and sweat and blood and tears. We have tried to live on the capital that they invested, but now we find we have to invest some of our own. I think that we have learned that it is the spirit and not the pattern or the physical remains of the past that is truly valuable to us. A civilization does not die until it becomes too tired and confused to go on living. A vital civilization, such as we are making in this country, must achieve new things if it is to fulfill its destiny. It requires today the creation of new things, new standards of living; and, above all else, it will demand a great architecture—an architecture which, like the Santa Fe Railroad, the Union Pacific, the Boulder Dam, the Golden Gate Bridge, Rockefeller Center, Parkchester, Chatham Village and the Westchester County Park System, will express the living guts of America. I think that is in the great tradition of American architecture."

Resolutions

Round table sessions, on Chapter Affairs, headed by *Joseph E. Smay;* on the Profession and Society, headed by *Frederick G. Frost;* on Post-College Architectural Education, headed by *John Bakewell, Jr.;* and on Defense Problems, headed by *W. Pope Barney,* were largely attended and led to several resolutions:

1. That the Board of Directors be requested to consider, for submission to the 1942 convention, changes in the by-laws which will provide for the establishment of an Institute Associateship Class in accordance with the following provisions: a. That the present Junior Associate Class of the Chapters be retained. b. That qualifications for Institute Associates be the same as now prescribed in the by-laws for the Chapter Associates. c. That election to Institute Associateship shall follow a procedure similar to that required for admission to corporate membership. d. That after a three-year period of Institute Associateship, such members shall make application for Corporate Membership or be dropped as an Associate unless extended by action of the Chapter. e. That a portion of the Annual Dues of each Institute Associate shall be paid to the Institute, for which each such Associate Member shall receive the Octagon, and shall have his name listed in the rolls of the Institute as an Institute Associate.

2. That the American Institute of Architects in a national convention assembled in Yosemite Valley in the year 1941, recognized the trend toward the increasing use of the planning professions and strongly urges that this use be further extended in the development of National Defense.

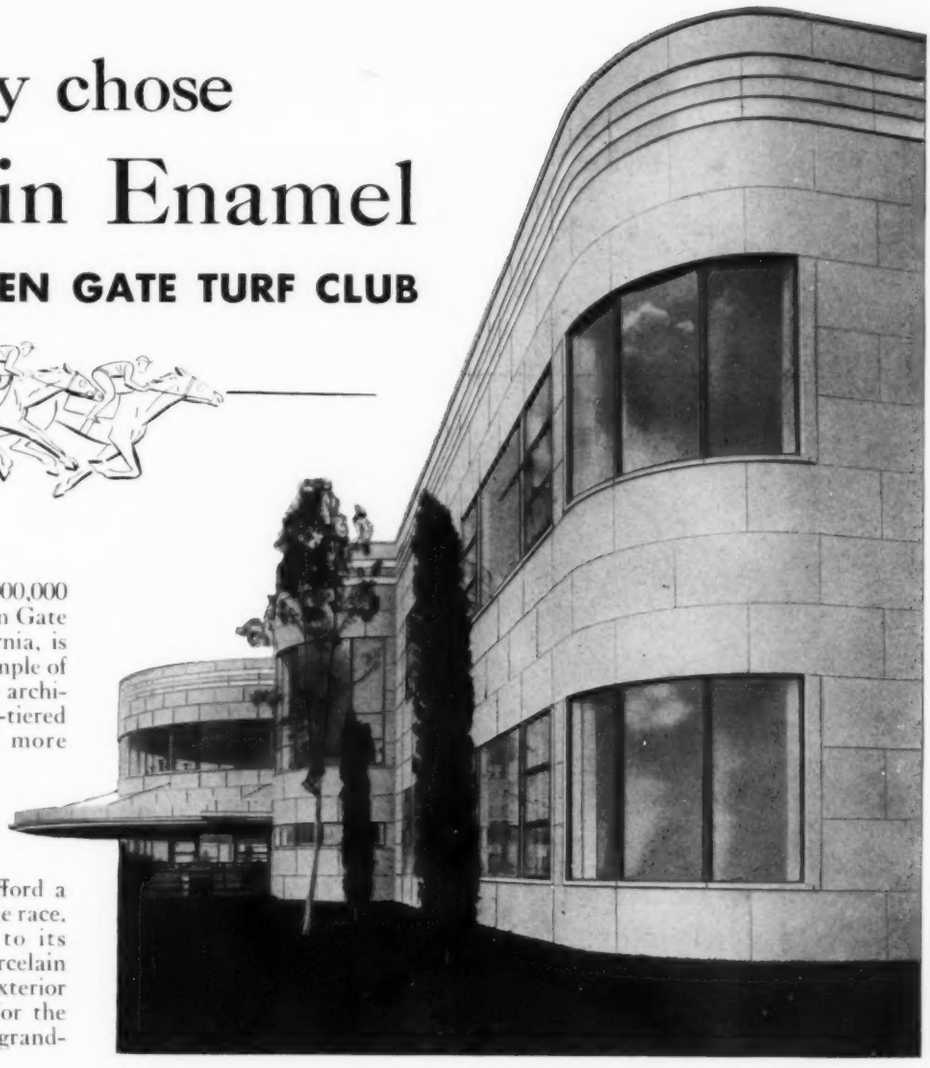
3. That the Board of Directors of the American Institute of Architects be requested to give thoughtful consideration to the sponsoring of architectural clinics or forums to the end that the members of the Institute may be encouraged to improve their professional status by advanced education-for-practice.

Election to the Institute of 14 fellows for "their contribution to design, research, literature, education and public service, fulfilling the exacting criteria of a vital architecture" was announced by the Committee on Awards and Scholarships.

Those advanced to fellowship were: *Gordon Allen* of Boston, Mass.; *Raymond J. Ashton* of Salt Lake City, Utah; *Leonard H. Bailey* of Oklahoma City, Okla.; *Frank N. Emerson* of Peoria, Ill.; *Robert K. Fuller* of Denver, Colo.; *Albert Harkness* of Providence, R. I.; *Lewis P. Hobart* of San Francisco, Calif.; *H. Roy Kelley* of Los Angeles, Calif.; *Roy F. Larson* of Philadelphia, Pa.; *Arthur Lamont Loveless* of Seattle, Wash.; *Loring H. Provine* of Urbana, Ill.; *Winsor Soule* of Santa Barbara, Calif.; *George Spearl* of St. Louis, Mo.; *Ernest Wilby* of Windsor, Ontario, Canada.

They chose Porcelain Enamel

FOR THE GOLDEN GATE TURF CLUB

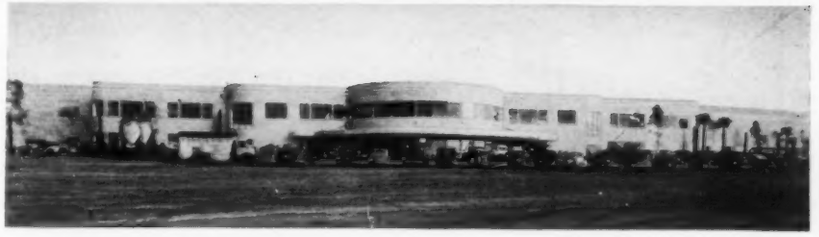


THE beautiful new $2,000,000 racing plant of the Golden Gate Turf Club at Albany, California, is probably the most perfect example of modern functional racetrack architecture in the world. Its three-tiered grandstand not only seats more people than any race course in the country, but is designed so that every spectator is centered as directly as possible upon the finish line. The grounds are graded to afford a perfect view of every inch of the race.

The major contribution to its beauty is the blue and gold porcelain enameled steel used for the exterior covering of the grandstand, for the betting windows and for the grandstand boxes.

Porcelain enamel on U·S·S VITRENAMEL was chosen primarily for its permanence and beauty, and next for its advantage of eliminating upkeep costs such as painting. One hundred and twenty-five tons of enameled sheets were used. (The Porcelain Enamel Institute of Chicago says, "It is probably the largest job which has ever been constructed with porcelain enamel panels.")

The panels were applied to wooden studs by means of small clips welded to their backs and sealed together with mastic. No backing was used on the panels, most of which are of 50" by 80" dimension, and 18 gauge in thickness.



Mr. Maury I. Diggs was designer and builder. The U·S·S VITRENAMEL sheets were fabricated and enameled by Ferro Enameling Company of Oakland, and installed by Frank Allen Ferro Porcelain Construction of San Francisco. Mr. Jack Casson, general contractor.

PORCELAIN ENAMEL ON USS Vitrenamel UNITED STATES STEEL CORPORATION SUBSIDIARIES

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Pittsburgh and Chicago

Columbia Steel Company, San Francisco, *Pacific Coast Distributors*
Scully Steel Products Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

UNITED STATES STEEL

WITH RECORD READERS

(Continued from page 14)

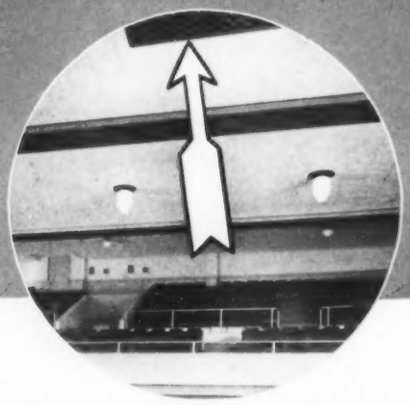
Correction

ALBERT A. ANIS was the only architect for the Mercantile National Bank Building, which ranked well in the RECORD Poll in Miami (AR 4/41, p. 21). Weed and Reeder, reported as Associate Architects, were responsible for the interior design of the theatre in the Beach Theatre Building, of which Mr. Anis was the architect, adjacent to the Mercantile Bank Building and part of the same project.

Air Change FOR Health

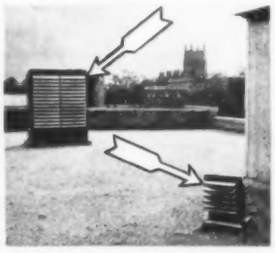
IN SCHOOLS

Right: Auditorium of Holy Name of Jesus School, New Orleans, showing one of ceiling grilles through which stale warm air is drawn by ILG Power Roof Ventilator.



Away with

STALE AIR, ODORS AND FUMES!



Above: 72" and 12" power roof ventilators, ventilating auditorium and projection booth.

Nowhere is a continuous supply of fresh air more vital than in school buildings. Just stirring up the air won't do. Stale air, odors and fumes must be driven out . . . *exhausted* . . . fresh, health-giving outside air *drawn in!* That's sensible ventilation at its simple best. And whether the problem requires blowers or propeller fans, or both, ILG equipment and experience are ready to supply the answer. See our catalog in SWEET'S . . . phone our nearest branch office . . . or write today.

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*AIR CHANGE . . . NOT JUST AIR MOVEMENT!

New Addresses

THE RECORD publishes changed and new addresses only on submission, making no attempt to keep a day-by-day account. The only organization in the country with facilities for doing this is **Sweet's Catalog Service**, whose painstakingly maintained list undergoes an average revision of 23 changes for every working day in the year. Below are the new addresses recently brought to our attention:

BERNARD JOHNSTON HARRISON JR. and Associates announce the opening of offices for the practice of architecture at 599 Fifth Avenue, New York City . . . The firm of Lyndon, Smith & Winn has been dissolved, and *Maynard Lyndon* and *Eberle M. Smith* are continuing their practice under the name of the original firm, Lyndon & Smith, at 208 Murphy Building, Detroit, Mich. . . . *Jesse L. Bowling* AIA, has moved his office from 37 W. 39th St., to 2 W. 47th St., New York.

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1620-1700
NEW ENGLAND, p. 62: 2, courtesy Pioneer's Village, Salem. 3, courtesy Essex Institute. 5, Bannister photo
NEW NETHERLANDS, p. 63: 11, courtesy The J. Clarence Davies Collection, Museum of the City of New York

1700-1780
NEW ENGLAND, p. 64: 13, Lichty photo. 14, and 16 from Shurtleff's "Log Cabin Myth." 15, courtesy Soc. Preservation New England Antiquities, Boston. p. 65: 19, Luscombe, del., courtesy Essex Institute. 20, courtesy Prof. Carl Feiss. 21, Chamberlain photo. 22 and 23, Bannister photos. 24, courtesy N. Y. Public Library
NEW YORK, p. 66: St. Thomas photo. 26, 27, 28 and 30, Bannister photos. 29, 31, Glenn photos.
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1920-1940
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Anaconda's small diameter building wire ideal for electrical modernization using existing raceways

BUILDINGS, LIKE PEOPLE, once in awhile need a shot in the arm to make them healthy and productive. With Anaconda's Densheath, an improved type of small diameter building wire, you can remedy one of the greatest deficiencies now existing in the constitution of old commercial and industrial buildings.

By rewiring existing raceways with Densheath, wattages can be increased *for the cost of only the wire and the labor!* For example, it is possible to increase wattage from 2,760 watts to 10,368 watts by using eight Densheath building wires in place of four Type R wires and changing the system from 2-wire, single-phase to 4-wire, three-phase.

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COMPARE THE NEW AND THE OLD!

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100% Copper
35 Amps. 8,050 Watts

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(Densheath)
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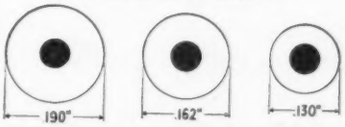
INSULATION SPECIFICATIONS AND DIAMETER THICKNESSES*



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inclusive for
rewiring only

*From Anaconda's "The Story of 1940 Code Changes." Ask for a copy.

USE MODERN IMPROVED ANACONDA WIRE & CABLE

TRENDS IN BRIEF

(Continued from page 22)

than 100,000 square feet by any basically sound method. That method might be the pooling of the interests of a group of small property owners for the rehabilitation of existing buildings, or it might be a huge demolition and reconstruction job costing many millions of dollars. It would permit combined planning by public housing authorities, city plan commissions and redevelopment corporations to a greater extent than ever before.

"In fact, it offers an outstanding challenge to architects, engineers, city planners and financiers to develop a new technique for the solution of one of the greatest social, civic, and economic problems confronting American municipalities."

Widespread importance

As encouragement to private financing and as pioneer legislation in the important field of urban rehabilitation, the new law is important far beyond the limits of its New York State application. It has already served as pattern legislation for bills to accomplish the same general purpose of redeveloping blighted areas in Massachusetts, Michigan and Illinois. The subject of urban rehabilitation and the provisions of the New York law are now matters of study with a view toward similar legislation proposals in Pennsylvania, Maryland, Ohio, Missouri, California, Oregon and Indiana. It is probable that new laws will shortly be passed in these states permitting the formation of Urban Redevelopment Corporations having in general the broad powers designated by the New York State law.

Removes legal barriers

Passage of such legislation in every state would remove many existing legal barriers to large-scale urban rehabilitation activity and would offer sound financial inducements to encourage private capital to take an increasingly important interest in the elimination of local slum areas and in the progressive, wide-spread rebuilding of American cities.

MANY architects are saying this to their clients. *Formed* Iron sinks are styled for modern kitchens and have several practical features.

Women appreciate the ease of cleaning the high-luster porcelain enamel, finished in color or plain white; also the acid-resisting feature at no extra cost.

Then when you remind your clients that this modern fixture is porcelain enameled on ARMCO Ingot Iron, their satisfaction is complete. Twenty-seven years of national advertising have created a real appreciation of this "world's standard enameling iron."

Thousands of Formed Iron sinks, lavatories and bathtubs are in use. Their owners like them. For detailed information, write to The American Rolling Mill Company, 1671 Curtis Street, Middletown, Ohio.

● *Sink fittings made of* ARMCO *Stainless Steel are bright, solid metal throughout. With no plating to wear off, they give lifetime service.*

PORCELAIN ENAMEL ON ARMCO INGOT IRON

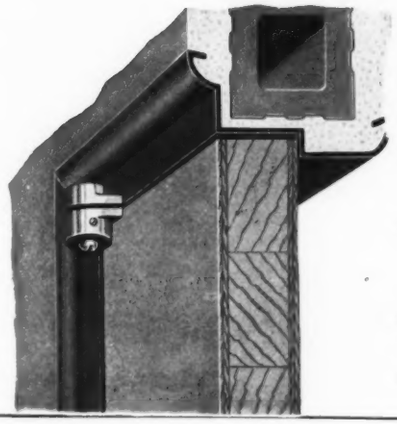
ARMCO INGOT IRON

Patented Unit Bulkhead is Basis of Proposed Construction System

Claimed by originator to be free forever from any maintenance

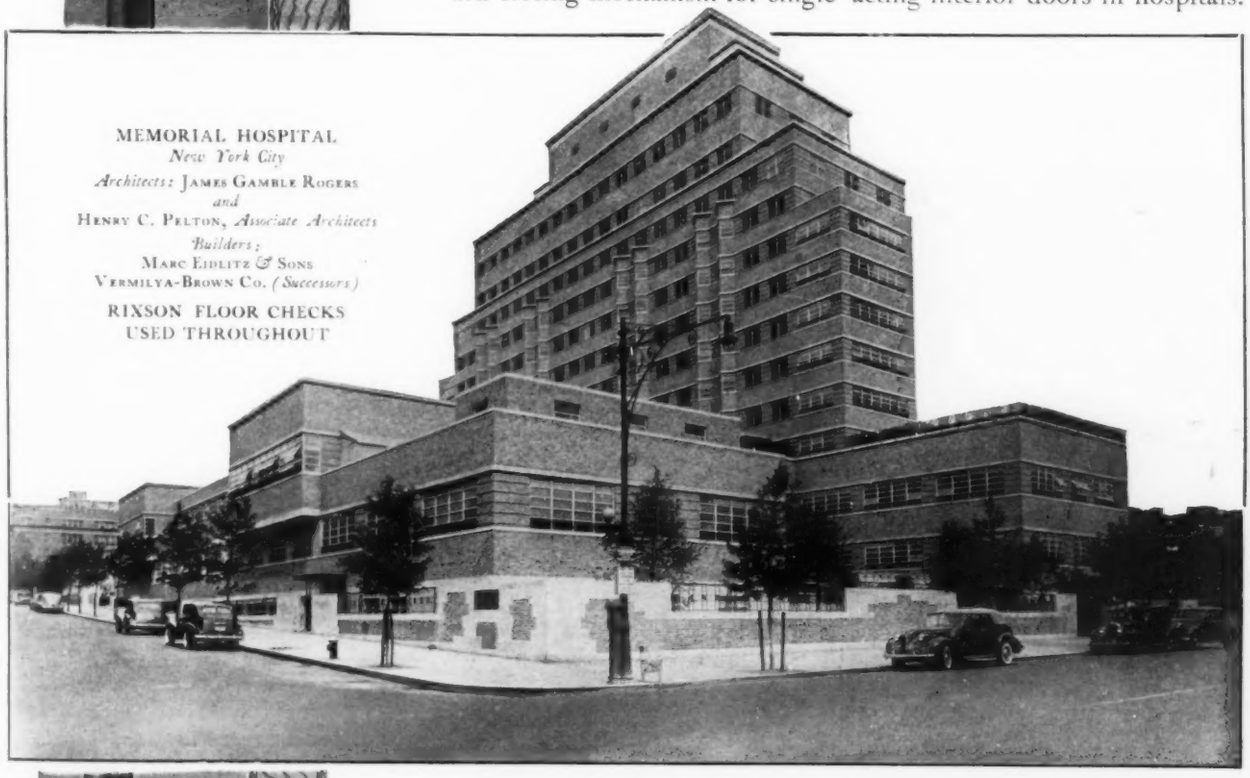
A SYSTEM OF CONSTRUCTION, claimed by its originator to be "verminproof, fireproof, moistureproof, windproof, lightningproof, and free forever from any maintenance as far as the exterior is concerned," is in the process of development by *Oscar B. Bach*,

(Continued on page 122)

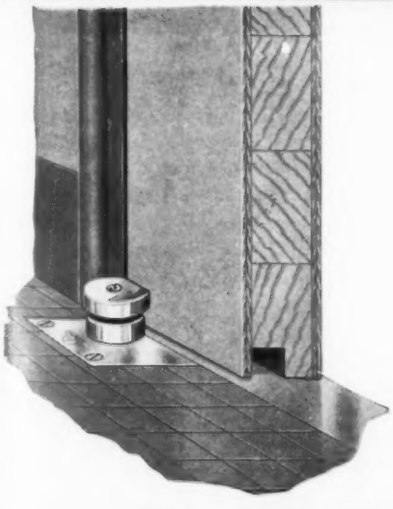


WHAT Well-Tailored Doors ARE WEARING THIS YEAR

● To give doors that "tailored", clean-cut appearance—not as a matter of fashion, but of clean-cut *functional design*—That's how architects are arriving at **RIXSON Uni-Check** as the standard closing mechanism for single-acting interior doors in hospitals.



MEMORIAL HOSPITAL
New York City
Architects: JAMES GAMBLE ROGERS
and
HENRY C. PELTON, *Associate Architects*
Builders:
MARC EIDLITZ & SONS
VERMILYA-BROWN CO. *(Successors)*
RIXSON FLOOR CHECKS
USED THROUGHOUT



The absence of protruding arms, hangers, housings—in fact, anything to break the clean sweep of walls and doors—is a relief to the eye. But, functionally, the **Uni-Check**, at a cost that competes with any other type of check, provides automatic quiet closing—eliminates hard-to-clean or dust catching surfaces—offers no obstruction to mops, dust cloths or paint brush... All good features for the hospital.

RIXSON Uni-Checks are ideal not only for hospital use but excellent wherever self-closing interior doors are a convenience or necessity. Full information available on request. Complete catalog information is on file with most architects. SPECIFY RIXSON UNI-CHECK FOR ALL INTERIOR SINGLE ACTING DOORS THAT HAVE TO BE SELF-CLOSING.

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RIXSON *Uni-Check*

TRENDS IN BRIEF

(Continued from page 120)

New York City metal craftsman and designer.

Already beyond the experimental stage, according to Mr. Bach, and ready for testing in the field, the Bachite system of construction depends primarily upon two elements: first, Bachite-processed metal, and second, a patented unit bulkhead. Of his metal-processing technique, Mr. Bach says:

"The Bachite process may be applied to any grade of steel—from ordinary black iron to stainless steel—rendering the metal corrosion-proof and abrasion-resistant for all time, and to a degree hitherto thought of as unattainable. Any finish or color, or patterns in color, may be obtained. For the first time, this process allows one to use steel for the construction and finish of a house in an economical manner."

The patented unit bulkhead, basis of the proposed construction system, depends largely on the use of Bachite-processed thin-gauge, cold-formed black-iron sheets for its practicability and economy. Mr. Bach says that, according to tests, his thermo-chemical treatment, employing a low-price treating agent, when applied to black iron of the gauge ordinarily used for tinning and tin cans gives it a corrosion resistance higher than that of 18-8 stainless steel—greater resistance than is provided by tinning and one-third less expensive.

Stuctural components

The structural components of the bulkhead are as follows: two sheets of conventional fireproof wallboard held apart at a distance of 2¼ in. by metal separators which are so shaped as to be structural members as well. A very thin sheet of Bachite-treated black iron is laminated to the outside wallboard (any type of finish—wallpaper, wood veneer—may be applied to the interior board, although it is contemplated that building in the higher-price brackets will have Bachite-processed metal surfaces both inside and out). The bulkhead components are fastened together with nuts and bolts—Bachite-processed, as is every metal element in the assembly "so that no disintegration or internal corrosion may ever take place." Cost of the bulkhead is estimated at about 17c per sq. ft. section.

Bulkheads standard width

Bulkheads will be offered to builders at a standard width of 12 in. and in lengths up to 16 ft. They may be cut at any multiple of 3 in., thus giving the system a 3 in. module of design. With minor variations, the same bulkhead is used for all the floors, walls, ceilings, and roof of a building, and through a designed use of the separators, each bulkhead is automatically and securely interlocked with the adjoining one. Joints between them are made permanently tight by means of extruded rubber gaskets, said to be guaranteed for 40 years.

("Trends in Brief" also on page 24)

TIMELESS_

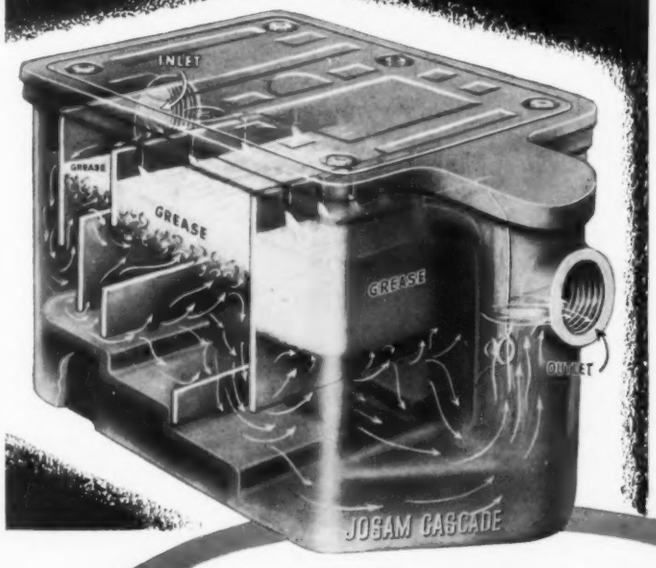
IT CAN'T WEAR OUT . . . Defiant of the years, the York V/W Freon Compressor offers exclusive advantages in air conditioning. It is so constructed that *every* part subject to wear, *including the cylinder walls* which are formed by removable liners, may be renewed easily and quickly. Balanced, statically and dynamically, it is vibration-free, thus may be installed anywhere, without a special foundation, on upper floors or even suspended from roof trusses. Unprecedented compactness makes it possible to put it in places where no other machine of equal capacity will go. York Ice Machinery Corporation, York, Pennsylvania.

York refrigeration air conditioning

YORK REFRIGERATION AND AIR CONDITIONING

"Headquarters for Mechanical Cooling Since 1885"

LEADERSHIP IS ALSO MEASURED BY THE PROTECTION IT PROVIDES



On Guard

AGAINST INSIDE FORCES THAT STRANGLE DEFENSE

The greatest menace to American defense comes from within . . . from undermining forces that dilute faith in democracy and strangle progress. Among these forces . . . just as harmful as if they were deliberate and intentional . . . are lowered standards of quality, lax management, weakened ideals of service. On guard, to do its part in combatting these influences, the entire JOSAM organization has been geared up to improve its products, step up its performance, perfect its service.

ON GUARD AGAINST GREASE
THE FORCE THAT STRANGLES DRAINAGE LINES

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CASCADE GREASE INTERCEPTOR

Practical and efficient, this unit guards against the strangulation and clogging of your drainage system from grease, fats, and oil. Saves expensive labor of locating the trouble...does away with torn-up floors ...forestalls costly shutdowns. The cascade design . . . exclusive with JOSAM . . . based on the waterfall principle . . . effectively separates grease from waste water, regardless of water temperature. Authoritative tests demonstrate over 95% of grease interception and retention with complete evacuation of solids. No cold water connections required. Grease accumulates in special chamber . . . easily removed. Readily installed on dishwasher and sinks, all types. Write for free literature . . . use coupon below.

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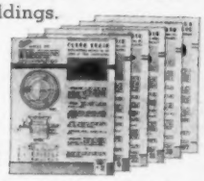

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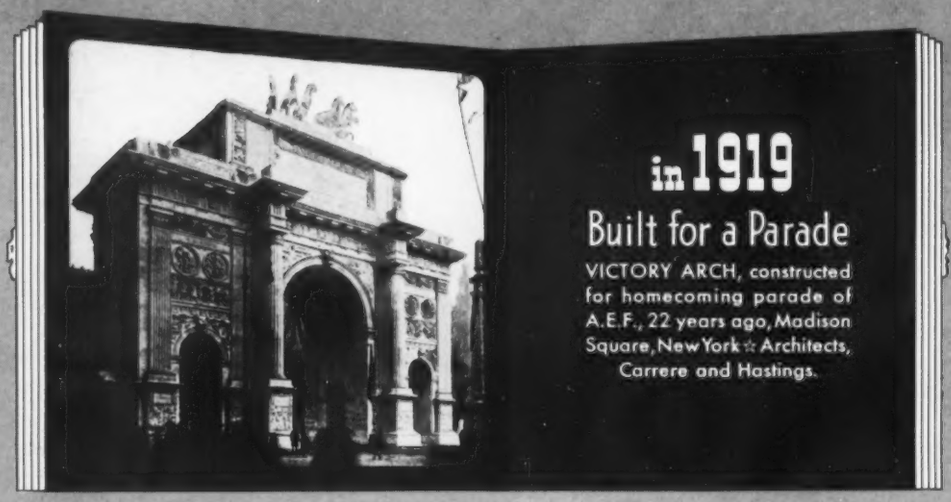
PLUMBING DRAINAGE PRODUCTS FROM FOUNDATION TO ROOF ★ FOR TWENTY-SEVEN YEARS

Table of Contents on Page 5



in 1919

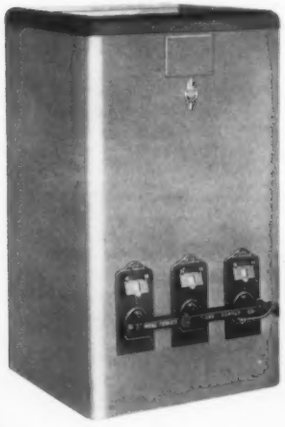
Built for a Parade

VICTORY ARCH, constructed for homecoming parade of A.E.F., 22 years ago, Madison Square, New York ☆ Architects, Carrere and Hastings.

THEN, AS NOW, *Payne* MEANT "RELIABLE GAS HEATING"

Through the long parade of years, PAYNE has concentrated on continually improving gas heating standards. And today, as always, this specialization—with constant testing and research—keeps PAYNEHEAT *years ahead*.

Every PAYNE unit you specify is twice-tested and backed by all our accumulated engineering knowledge. ☆ For details, consult Sweet's, Western States AEC, our convenient AIA file (send for one!) . . . or see your PAYNEHEAT Contractor or Gas Company.



Left: PAYNE *Gravity Unit. Also:* Zoneair ☆ Floor Furnace ☆ Duplex Furnace ☆ Modern Console ☆ Spacesaver Unit ☆ Forced Air Unit ☆ Industrial Units.

PAYNE More Than a Quarter Century of GAS Specialization

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ARCHITECTURAL RECORD (Vol. 89, No. 6, June, 1941) is published monthly by F. W. Dodge Corp., 119 W. 40 St., New York, N. Y. $3 per year; Foreign, $5. Reentered as second-class matter Mar. 24, 1939, at the Post Office of New York, N. Y., under the act of Mar. 3, 1879.

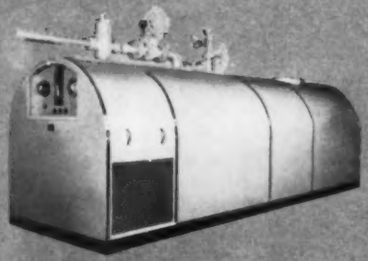
HELP INDUSTRY MEET
THE VITAL NEED FOR

Quick Fire Extinguishment

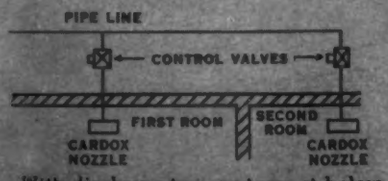
WITH MINIMUM LOSS

This
UNIQUE COMBINATION
OF QUALITIES EXPLAINS
THE UNPRECEDENTED
PROTECTION FROM FIRE
AFFORDED BY CARDOX

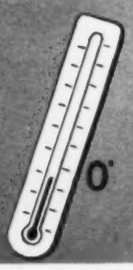
A Cardox System makes available virtually unlimited quantities of Carbon Dioxide through centralized refrigerated storage in vessels of large capacity (¼ to 125 tons or more) . . .



. . . Provides for release of CO_2 through a simplified piping system at any one or all of many hazards, with discharge by any combination of manual or automatic controls . . .



. . . With discharge temperatures at below-zero° F, CO_2 has maximum cooling effect, thus slowing formation of combustible gases and limiting damage caused by flame as well as that caused in adjacent areas by high temperatures . . .



. . . And with emission through large pipe-size discharge lines in tremendous volume to successfully overwhelm fires of any size, and at fixed rates of flow for predetermined uniform extinguishing properties.

As Available Only in

CARDOX

● Never was industry's desire and need for sound architectural guidance more acute than now. By the same token, never was the architect's responsibility greater; not only to design plants capable of turning out more products in less time, but to provide additional safeguards from fire delays for that new productive capacity.

The simplest and most practical way to meet the second requirement is a Cardox specification. And here are the demonstratable reasons why: Cardox Systems offer all the qualities of carbon dioxide as the extinguishing medium plus exceptional advantages. This inert gas which itself *causes absolutely no damage*, has the property of completely surrounding fire, penetrating cracks and crevices, going over and around obstructions, *creating atmospheric conditions in which no fire can exist.* It is the contribution of Cardox that this fire-smothering gas can now be set up in systems of large capacity to discharge in the huge volumes required for swift extinguishment of large as well as small fires in the least possible time.

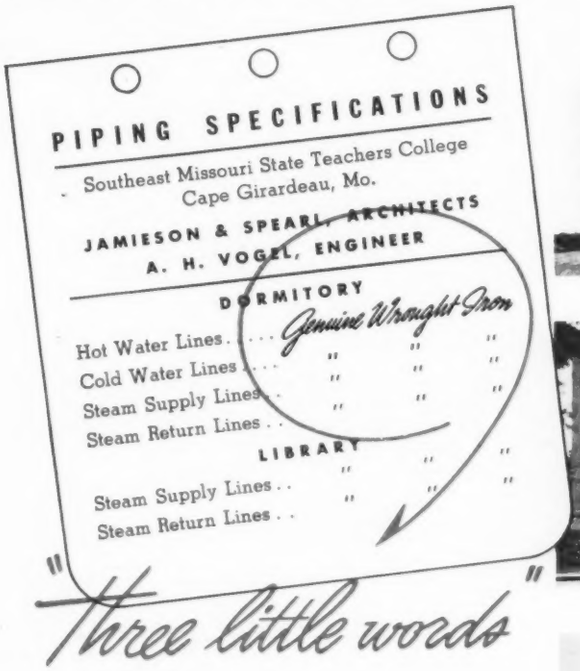
Of special interest to architects are these further Cardox refinements: refrigerated storage at constant temperature, with such factors as pressure, rate of flow and expansion under complete control . . . simplified piping to any hazard . . . fewer and less conspicuous discharge nozzles . . . easy expansion of a system to cover additional hazards.

Write for the complete Cardox Data File containing Underwriters' Laboratory Bulletins and test and installation data.

CARDOX CORPORATION

BELL BUILDING · CHICAGO, ILLINOIS

CORROSION COSTS YOU MORE THAN WROUGHT IRON


PIPING SPECIFICATIONS
Southeast Missouri State Teachers College
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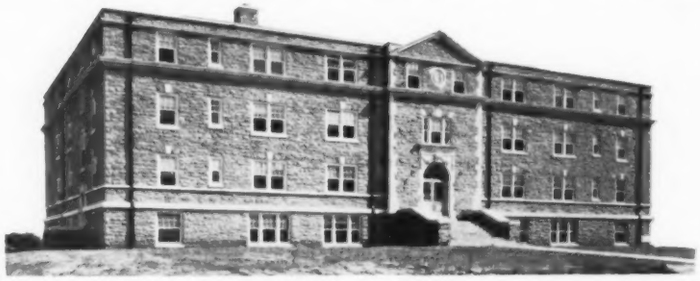
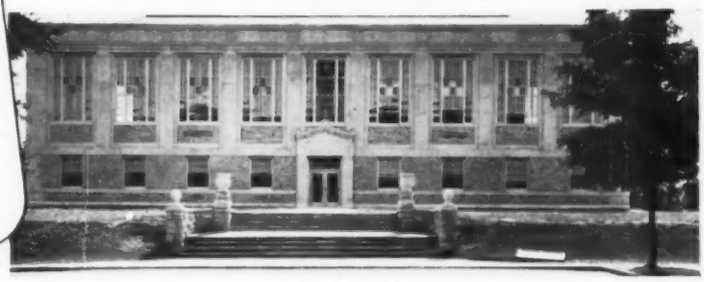
DORMITORY
Hot Water Lines . . . . Genuine Wrought Iron
Cold Water Lines . . . . " " "
Steam Supply Lines . . " " "
Steam Return Lines . . " " "
LIBRARY
Steam Supply Lines . . " " "
Steam Return Lines . . " " "

"Three little words" protect these buildings against Corrosion



Dormitory Building



Library Building

Steam Supply and Return Lines

BYERS WROUGHT IRON

From the standpoint of effect on future costs and owner satisfaction, plumbing and heating specifications are among the most important that architects and engineers write. The causes of corrosion are always present. Eliminating the danger of premature failure and frequent replacement demands careful material selection.

The specification shown above illustrates how many architects and engineers are meeting this problem by writing "Wrought Iron" for corrosive services. The soundness of this choice is confirmed by engineering records.

A study of a number of buildings where wrought iron was installed in hot and cold water lines showed wrought iron *still serving* after periods of from 34 to 81 years, with the average life of nine such installations in excess of 50 years. In an equal number of similar buildings, lines of another material had failed after ten to 31 years, with an average total life of 21 years. Equally impressive records are available on steam supply and return lines, as you probably know from your own experience.

Records like this provide the only dependable guide in selecting piping materials for today's structures. If you have a specification which should anticipate corrosion, you may find that wrought iron is the answer. When considering the suitability of wrought iron it is worth remembering that we are in a position to make prompt deliveries—wrought iron pipe, in all popular sizes, can be shipped immediately from jobber stocks, or in the case of unusually large quantities, from our warehouse. Our Engineering Service Department will furnish you with performance data on applications similar to those you have in mind. Ask, also, for our bulletin, "Wrought Iron for Piping Systems."

A. M. Byers Co., Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

GENUINE WROUGHT IRON CUT NAILS

—duplicates in design and material of early American hand-wrought nails—are being made from Byers Wrought Iron by a century-old New England Manufacturer. Ask for the name, if you are interested.

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POINT NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SWORN BASIC FACTS USED ARE FROM 1940 SWEETS CATALOG	Frame Bars $1\frac{1}{2}$" deep	Ventilator Frame Bars $1\frac{5}{8}$" deep	Muntin Bars $1\frac{1}{2}$" deep	All weathering members hot rolled $1\frac{1}{8}$" angles	Rustless Bronze bearing cup pivot	Riveted Frame Corners	Welded Frame Corners	Riveted Ventilator Corners	Welded Ventilator Corners	Interlocked Muntin Joints	Welded Muntin Joints	Cam lock & push bar standard	Vertex Corners on All weathering members	$\frac{5}{8}$" Masonry Anchorage	Available with wrought iron sills or all wrought iron	Flat Outside Surfaces	Available in Tontan Iron	Available with Phosphate rust proofing	One piece hot rolled frame section for outside glazing	Integral baffle on Ventilator Bar	
MESKER	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO	85%	
SASH-A	YES	YES	YES	NO	NO	YES	YES	YES	NO	YES	NO	NO	NO	NO	YES	YES	NO	YES	NO	NO	50%
SASH-B	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	YES	NO	NO	YES	NO	NO	NO	YES	NO	NO	30%
SASH-C	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO	NO	YES	NO	YES	NO	NO	25%
SASH-D	NO	NO	NO	NO	NO	YES	YES	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO	30%
SASH-E	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO	YES	NO	NO	YES	YES	NO	YES	35%

MESKER STEEL SASH gives you at least 35% MORE QUALITY for your money!

Check the Steel Sash Merit Meter . . . and *believe your eyes.* There's no magic to this frank, easy-to-understand chart. It proves Mesker Steel Sash gives you at least 35% more quality for your money! It's simply based on cold, unembellished FACTS. Quality-minded architects, builders and dealers all over the country are referring to it constantly. Use it yourself . . . once . . . and you'll realize why. It's the *only* easy way to compare steel window quality features, point-by-point. It takes the guesswork out of steel sash specification work. It saves time, money, headaches. While detailing only Industrial Pivoted Sash features, it's indicative of the extra value built into *all* Mesker products. It's free for the asking. Mail the coupon today . . . no obligation.

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ALUMINUM, DEFENSE, AND YOU

ALCOA

3

IT IS EASY TO UNDERSTAND ABOUT ALUMINUM AND DEFENSE

THE WHOLE THING BOILS DOWN to two simple questions:

1. **How much aluminum** are America and England going to need?
   There is only one answer: The democracies must have *all the aluminum it takes to win*, and nobody knows how much that is.
2. **How fast** is aluminum needed?
   We don't know, for sure, but just as fast as the aircraft plants, munition plants, shipyards, and the like, can be expanded to use aluminum and other materials for defense purposes.

THOSE IN AUTHORITY IN WASHINGTON are putting together, day by day, expert estimates of what all these defense industries are going to need, month by month, clear to the end of 1942. These estimates, as issued, are our book of rules.

FOR MONTHS WE HAVE BEEN, and are now, delivering aluminum for defense purposes far in excess of that called for by prior estimates.

DEFENSE IS NOW TAKING from us over 40 million pounds a month. Every American ought to have a picture of just how much aluminum that is; here it is:

Peace-time America, during the nine years from 1930-8, could find use for only 14 million pounds a month from us.

In the busy year of 1939 we had to make only 27 million pounds a month to satisfy the civilian needs of this prospering country.

Suddenly, defense alone needs 40 million a month! 14 million (civilian), to 27 (civilian), to 40 (defense) and soon to 50 and beyond!

★ ★ ★ ★

YOU CIVILIAN USERS of aluminum are grand people.

THE WAY YOU ARE DOING WITHOUT aluminum until producers can catch up again with civilian uses is typically American. We are sincerely grateful for your understanding.

IN THIS RECESS you are having to scramble for **RECESSITIES**—other materials which just don't fill the bill 100%, because there is no pat substitute for aluminum.

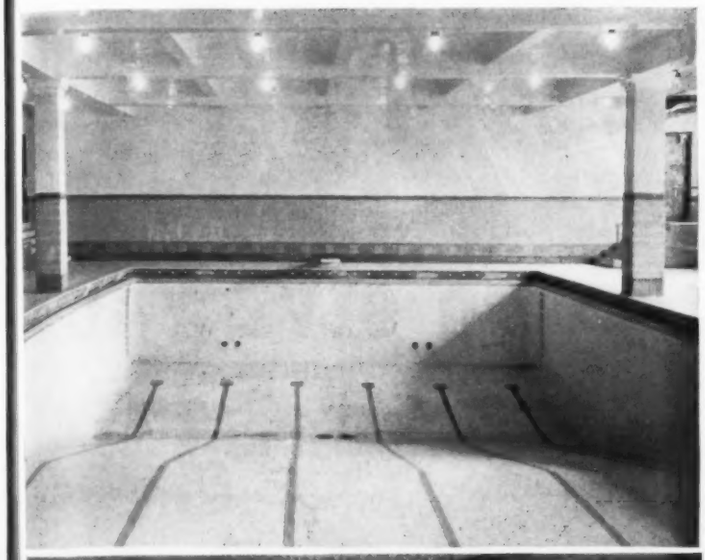
IT'S TOUGH ON YOU and it's hard on us to have to turn away temporarily from the friends and pursuits of a lifetime.

WE HAVE NOT TURNED OUR BACKS!

WE INTEND that no civilian shall have to forego the things aluminum can do best one minute longer than we can help.

ALUMINUM COMPANY OF AMERICA

Architects say . . . ABOUT CHLORINATION *for* SCHOOL POOLS



The next school job you design warrants the same consideration as expressed by the following well known architects. W&T Chlorinators justify your specification by giving years of accurate, dependable service at minimum maintenance expense. Chlorination is the only method of swimming pool sterilization which offers:

- Sterilized water in the pool.
- A residual chlorine content available to cope with contamination introduced by the bathers.
- A margin of safety to take care of sudden increase in bathing load.
- A simple, quickly made colorimetric test for control of operation.

Write for the W&T Swimming Pool Series reviewing water treatments on several different types of pools. . . . For the chlorination of small water supplies, such as those at suburban or country schools, private estates, etc., Wallace & Tiernan have designed a small W&T Hypochlorinator: simple, inexpensive, easy to operate. Bulletin 357 describes this equipment in detail. Write for copy.

(Above) Pool in Hazleton High School, Hazleton, Pa. *Ritchie Lawrie, Jr.*, of Lawrie & Green, the Architects and Engineers, says, "We believe chlorinators provide the most practical, economic and efficient method for the proper sterilization of the water in the pool, thereby insuring a healthy pool. It has been our pleasure to approve the installation of Wallace and Tiernan Chlorinators for the swimming pool in the Hazleton High School Building and for a number of other swimming pools."

(Center) Pool in the gymnasium in Brooklyn College, a $10,000,000 project. *Randolph Evans,* the architect, says, "We have specified Wallace & Tiernan Chlorinators for the swimming pool at Brooklyn College. Their qualities of disinfecting are such as to insure a healthy pool and the water is kept constantly sterilized."

(Below) Concerning this pool in St. Joseph's High School in Philadelphia, *Emile G. Perrot*, the architect, has this to say, "After a very exhaustive investigation relative to the best method of sterilization for swimming pools, I have made it my practice to specify Wallace & Tiernan Chlorinators for all swimming pools which I have designed, with the full assurance that the water will be free from infection."

"SWIM IN DRINKING WATER"

WALLACE & TIERNAN COMPANY, INC.

NEWARK
NEW JERSEY

Represented in
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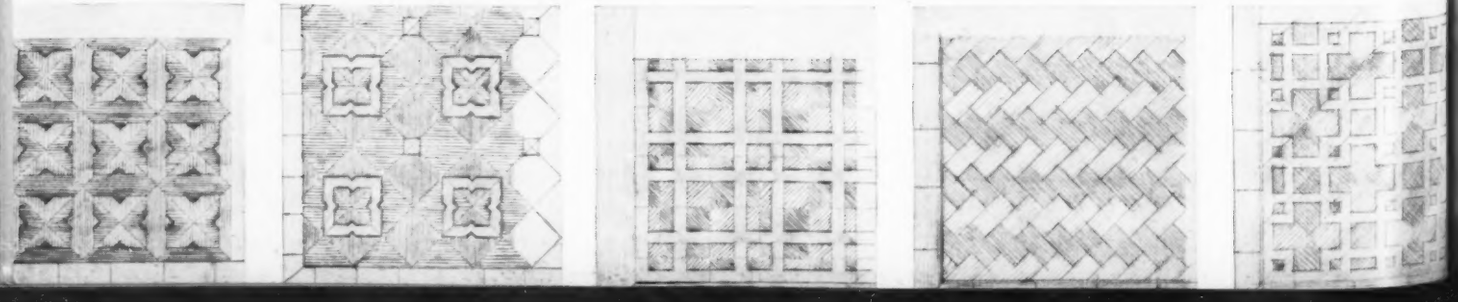
PRESENTING "Motif'd TO GIVE YOU

New Ideas To Decorate Your Acoustical Surfaces

This attractive design is "Motif'd Acoustone" in the reception room of a large manufacturer's office. See how the pattern has character yet the whole effect is dignified and unobtrusive.

Another distinctive pattern in "Motif'd Acoustone." This is another example of subtle beauty with Acoustone's "Spline-Alinement" feature plus the advantage of permitting you freedom in design.

Here are the sketches of designs you can create for your "Motif'd Acoustone" sound control treatments



Acoustone"

A FREE HAND IN ACOUSTICAL DESIGN

Add Character To Acoustical Surfaces At Low Cost

"Motif'd Acoustone" is an integral decoration—not a paint—not a covering. Any design you select or create is "etched" into surface of Acoustone by a new USG process.

Now you can provide the appearance of a "flush joint" sound-correcting surface plus an individual decoration.

"Motif'd Acoustone" costs but little more than Acoustone itself. For as little as 7c per square foot you may have your own design lastingly "etched" into any Acoustone surface. Here's real decorative freedom!

We have developed several simple basic pattern ideas you may like. But you'll probably prefer to create your own. Find out about this great new decorative idea. Write USG today.

ACOUSTONE'S "SPLINE-ALINEMENT" ANSWERS YOUR DEMAND

Architects demanded an acoustical treatment adaptable to modern, functional construction. USG Acoustone with "Spline-Alinement" is it!

Into each Acoustone unit is rigidly fabricated a thin metal spline. When applied, this spline meshes firmly and snugly into a slot in the tile butted against it. Because of the sharp, clean-cut edges of Acoustone, a joint barely discernible results. "Spline-Alinement" keeps adjoining tiles flush. A smooth, even surface is secured. Corners don't "drop."

Acoustone, with its wide range of soft colors and rich travertine-like texture, has long been known as the most beautiful of all acoustical materials.

Write today for a sample of Acoustone, for full information on all phases of USG's complete *noise reduction* and *acoustical correction* service. Ask about "Motif'd Acoustone"! A nation-wide corps of capable engineers and applicators are at your service. Write to USG at 300 W. Adams St., Chicago, Ill.

1. ACOUSTONE IS FIREPROOF
—To great efficiency and rare beauty, Acoustone *adds a major safety factor—protection against fire.*

2. ACOUSTONE REFLECTS LIGHT
—Natural Acoustone *reflects 70% of light striking it—mill painted* Acoustone *reflects more than 80%.*

3. ACOUSTONE IS CLEANABLE
—Refresh Acoustone *either by painting or vacuum cleaning. Maintenance cost is low for building's life.*

4. ACOUSTONE IS PAINTABLE
—All-travertine-textured Acoustone *is paintable and re-paintable without reducing its efficiency.*

Acoustone

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MADE BY UNITED STATES GYPSUM COMPANY

—WHERE RESEARCH DEVELOPS BETTER, SAFER BUILDING MATERIALS

Can you afford to specify anything but the best?

GREATER dependability and operating economy . . . these are two of the reasons why so many Architects specify Herman Nelson Products for commercial, industrial and public buildings of all types.

It is no idle claim that extra quality and value are built into Herman Nelson Heating, Ventilating and Air Conditioning Equipment. Highly satisfactory results have been provided by thousands of Herman Nelson Installations during the past 34 years. This performance record in actual service is important.

Today, as in the past, Architects are unwilling to relinquish this assurance that their clients will enjoy greater dependability and operating economy because of the slight additional cost of Herman Nelson Products.

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This hiJet Heater is available with either high or low velocity discharge, with outlet arrangements to provide for various types of air diffusion. The heating element incorporates Herman Nelson's Patented Stay Tube, which maintains proper relationship between the headers. The blades of the fan have an extremely wide face area and are of aerodynamic shape.

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THE HERMAN NELSON CORPORATION MOLINE ILLINOIS

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Nairn solves a tough construction problem

Prevents wall cracks appearing when building "settles"!

More and more architects are discovering every day that Nairn Wall Linoleum allows them to have the walls of a new house decorated as soon as the plaster is dry—without fear of unsightly cracks developing a few months later!

The exceptional flexibility of this modern wall covering enables it to absorb all strain of normal settling. Rounded coves at the juncture of walls and ceilings, as well as at vertical corners, make doubly sure that building movement will not fracture Nairn Wall Linoleum.

No other wall treatment provides both the *permanent* color beauty and crack-proof service offered by Nairn Wall Linoleum. It can also be carried smoothly around *curved* surfaces! When installed by Authorized Contractors, it is fully guaranteed. Write for *free*, 16-page book, *"Nairn Linoleum for Floors and Walls."*

CONGOLEUM-NAIRN INC., KEARNY, N. J.

NAIRN
WALL LINOLEUM

NOTICE THE CEILINGS in the bath above, and the kitchen, lower right. Both are covered with the same Nairn Wall Linoleum used on the walls. Ceiling cracks as well as wall cracks are avoided in this way, and an attractive decorative harmony is obtained as well. Notice, too, the contrasting strips set in the walls and ceilings of both rooms. This effective touch costs very little, as inexpensive, ready-cut Nairn Feature Strips are used.

PERMANENT WALL COLORS AT A PRACTICAL PRICE! Nairn Wall Linoleum costs far less than any other type of permanent wall finish, such as colored tile or glass panels —and it lasts as long as the building itself! The colors are beautiful and varied—and all patterns are color-correlated with Nairn Linoleum for floors, permitting unusually effective color schemes. The patterns, too, will not fade, discolor, stain or dent!

IT'S NO ACCIDENT WHEN YOU *Specify* TEN-LOX

REG. U. S. PAT. OFF.

MANY installations of TEN-LOX Anti-Slip Stair Treads and Floor Tile, and a constantly growing list of users are definite proof that TEN-LOX is the answer to giving walkway surfaces SAFETY and PERMANENCE.

TEN-LOX is a long wearing aluminum casting with abrasive grits (aluminum oxide) that penetrate clear through the entire thickness of the casting. TEN-LOX has the approval of the Underwriters' Laboratory. Safety Appliance Report No. 807 says—"This material is of such a nature as to provide unusually high anti-slip value under a wide variety of service conditions when new and when used."

Both treads and tile are available in a wide variety of sizes. Tile is cast in three thicknesses, ¼", 5/16" and ⅜"; treads in two thicknesses, ¼" and ⅜", with or without nosings. TEN-LOX is easily and quickly installed over existing surfaces, laid over sub-floors or set in fresh concrete.

Architects who are looking for stair treads and flooring that is absolutely non-slip under wet, dry and even oily conditions will make no mistake in specifying TEN-LOX. We invite your investigation. Without any obligation we will cooperate with you to the fullest extent.

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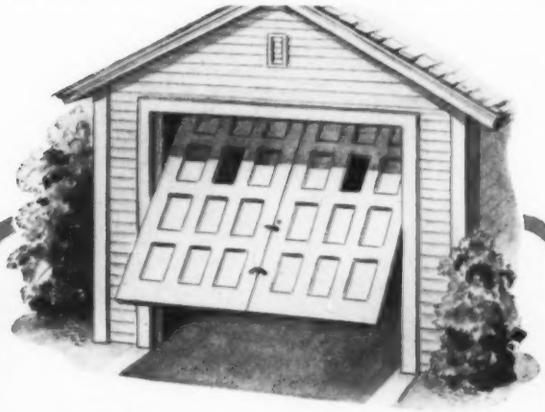
Meet Any Garage Specification With A Stanley Hardware Set



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An upward-acting hardware set that fits any pair of doors not exceeding 250 pounds in weight; 8′ to 8′5″ wide, 7′ to 8′ high, 1⅜″ to 1¾″ thick. Other sizes on special order.

Particularly useful where design or decoration to conform with architectural style requires construction of special doors. Practically no head room required.

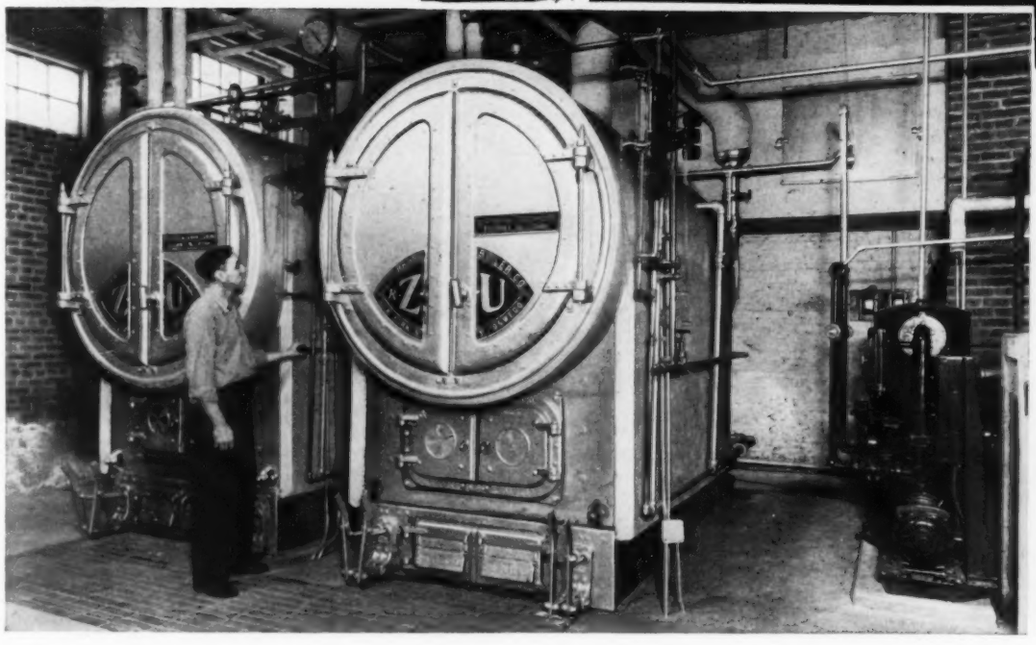
Doors open easily. Heavy springs do the lifting, with only a slight starting pull.

YOUR GUIDE TO GOOD HARDWARE

Stanley Catalog No. 61, giving complete details on the entire Stanley Hardware line, will prove handy in preparing your specifications. Write for your free copy. The Stanley Works, New Britain, Connecticut.

STANLEY

HARDWARE FOR CAREFREE DOORS



A Lesson in Economy

at the McKinley School, Kearny, New Jersey.

Consulting Engineers, O. Vogelbach & Associates, Newark, N. J., for Board of Education, Kearny, N. J.

Heating Contractor, Thomas H. Branch & Son, 91 Forest Street, Kearny, N. J.

ONLY ONE FIRING PER DAY at the McKinley School

Kearny, N. J. — but that keeps 22 school rooms at 70 degrees during school hours, and around 60 degrees the rest of the time. The two sturdy Fitzgibbons R Z U Boilers, with their L. J. Wing Combustion Control,* have proven so efficient that only one boiler at a time was needed during the past winter, even when outdoor temperatures hovered around zero. Low-cost rice anthracite is the fuel, and operating savings since installation a year ago already run into important figures, while the school enjoys an abundance and uniformity of heat that contrasts gratifyingly with the experience of other years.

Just one more of the many installations which prove that the architect or engineer who specifies Fitzgibbons boilers is taking no chances.

A line from you brings full details on Fitzgibbons boilers, and if you so desire, the full cooperation of Fitzgibbons Service to Architects.

*Combustion Control System supplied by the L. J. Wing Manufacturing Company, Newark, N. J.

SEE OUR CATALOG IN SWEET'S

Fitzgibbons Boiler Company, Inc.

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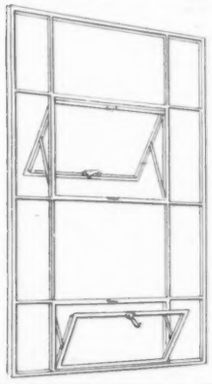
Collegeville-Trappe Joint High School, Trappe, Pa., where 105 units of Lupton "Projected-type" Steel Windows are installed. Architect—W. Marshall Hughes, Reading, Pa., Contractor—Warren B. Zern, Pottstown, Pa.

Detail drawing of Lupton "Projected-type" Steel Window.



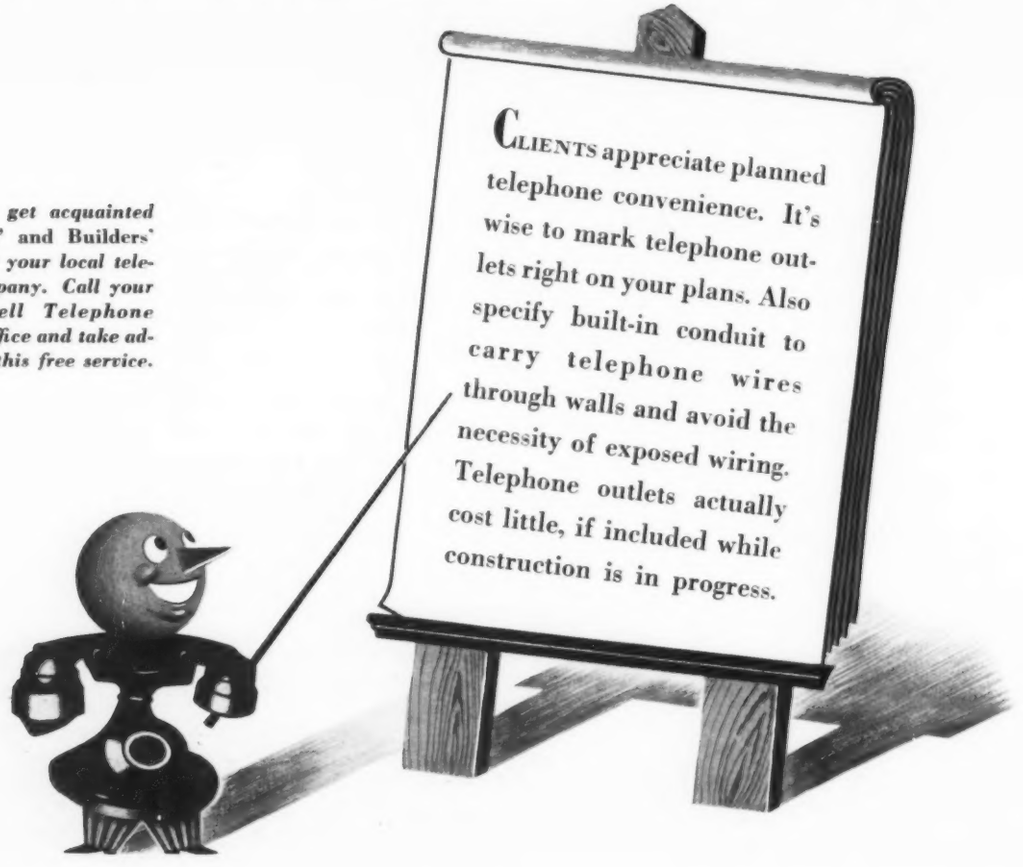
Windows of tomorrow for the schools of today! . . . Trim, graceful, windows with more glass area for size of opening than ever before possible, providing an abundance of light in all parts of the classroom . . . That's Lupton "Projected-type" Steel Windows.

Lupton Steel Windows afford flexibility in design to meet every requirement for natural ventilation and daylighting. Open with a finger-touch. Close absolutely tight. No warping, no rattling, no sticking. Shades or venetian blinds may be attached to the Window. No holes to be drilled. No splitting or cracking of casings with nails or screws.

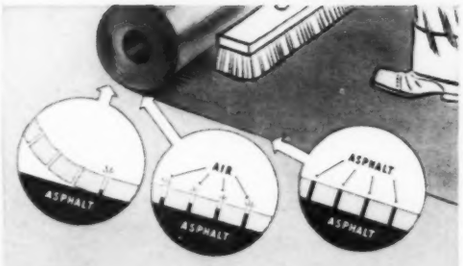
The added refinement of Lupton Steel Windows is now available at a cost surprisingly low—lower than older-type Windows. Maintenance is negligible. Let us send you details and specifications for Lupton "Projected-type" Steel Windows for schools. Address: Michael Flynn Manufacturing Co., Allegheny Ave. at Tulip St., Philadelphia, Pa.

LUPTON
STEEL WINDOWS

• *You're invited to get acquainted with the* **"Architects' and Builders' Service"** *provided by your local telephone company. Call your nearest Bell Telephone Business Office and take advantage of this free service.*


CLIENTS appreciate planned telephone convenience. It's wise to mark telephone outlets right on your plans. Also specify built-in conduit to carry telephone wires through walls and avoid the necessity of exposed wiring. Telephone outlets actually cost little, if included while construction is in progress.

YOU MEAN THESE HOLES MAKE A BETTER ROOF?



The diagrams above illustrate the action of the J-M Perforated Asbestos Felt. Note how the air is first forced out through the perforations as the felt is laid, then how each tiny "vent" is completely sealed by the hot waterproofing asphalt when the felt is broomed in.

***YES!* New J-M Perforated Felts practically eliminate blistering, cut application costs, provide the time-tested advantages of all J-M Asbestos Felts**

Punch holes in a roofing felt? Doesn't sound right, does it? But read what these holes actually do . . . see how they help raise the efficiency of built-up roofs to new highs!

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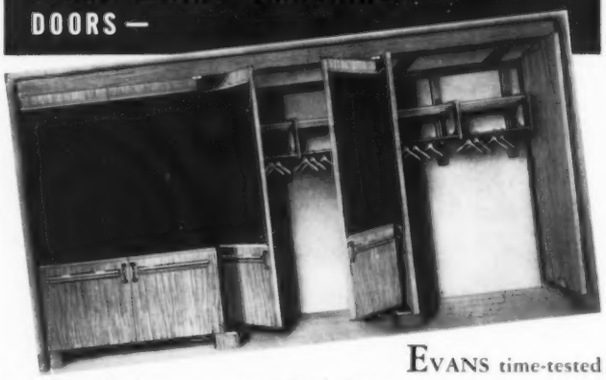

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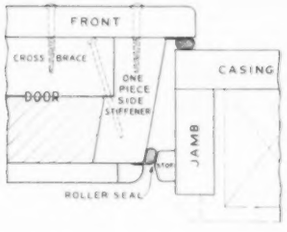

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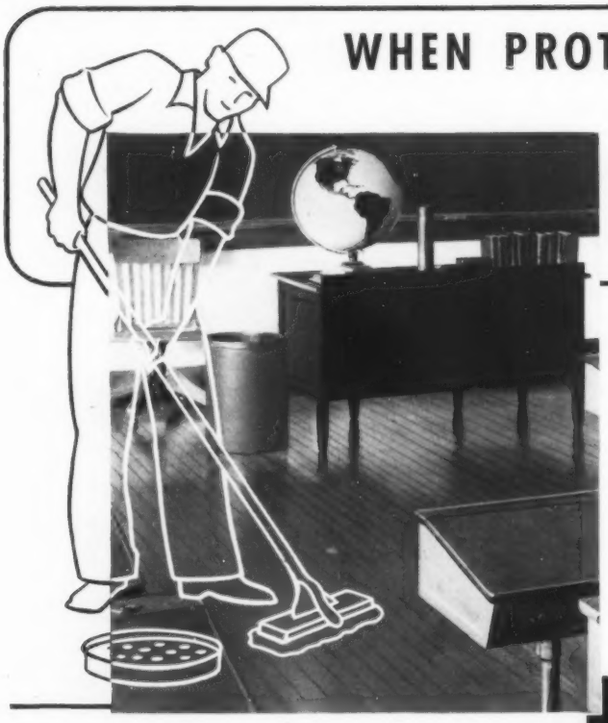

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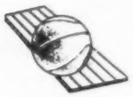

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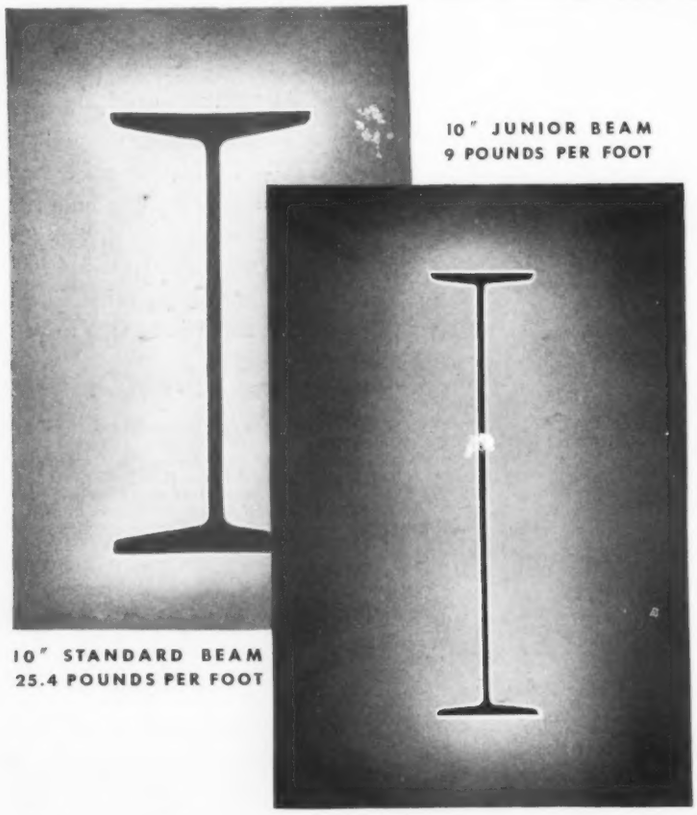

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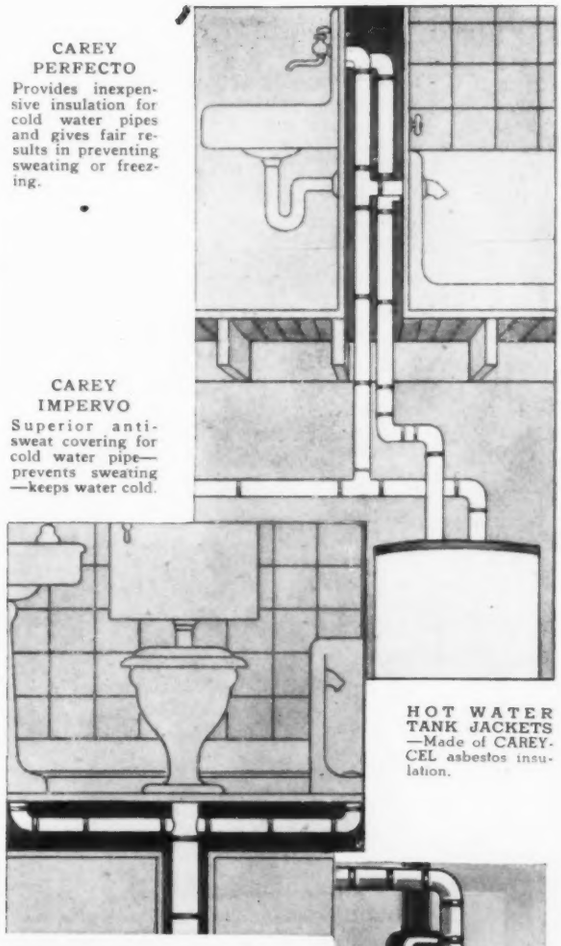

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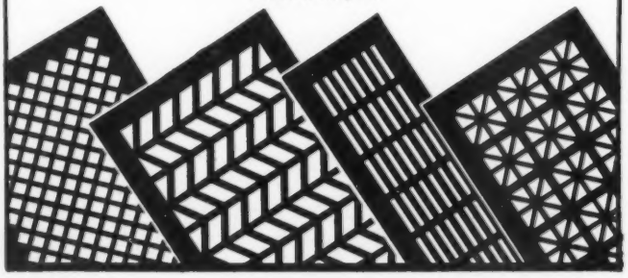

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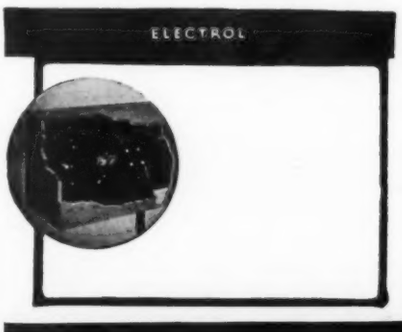

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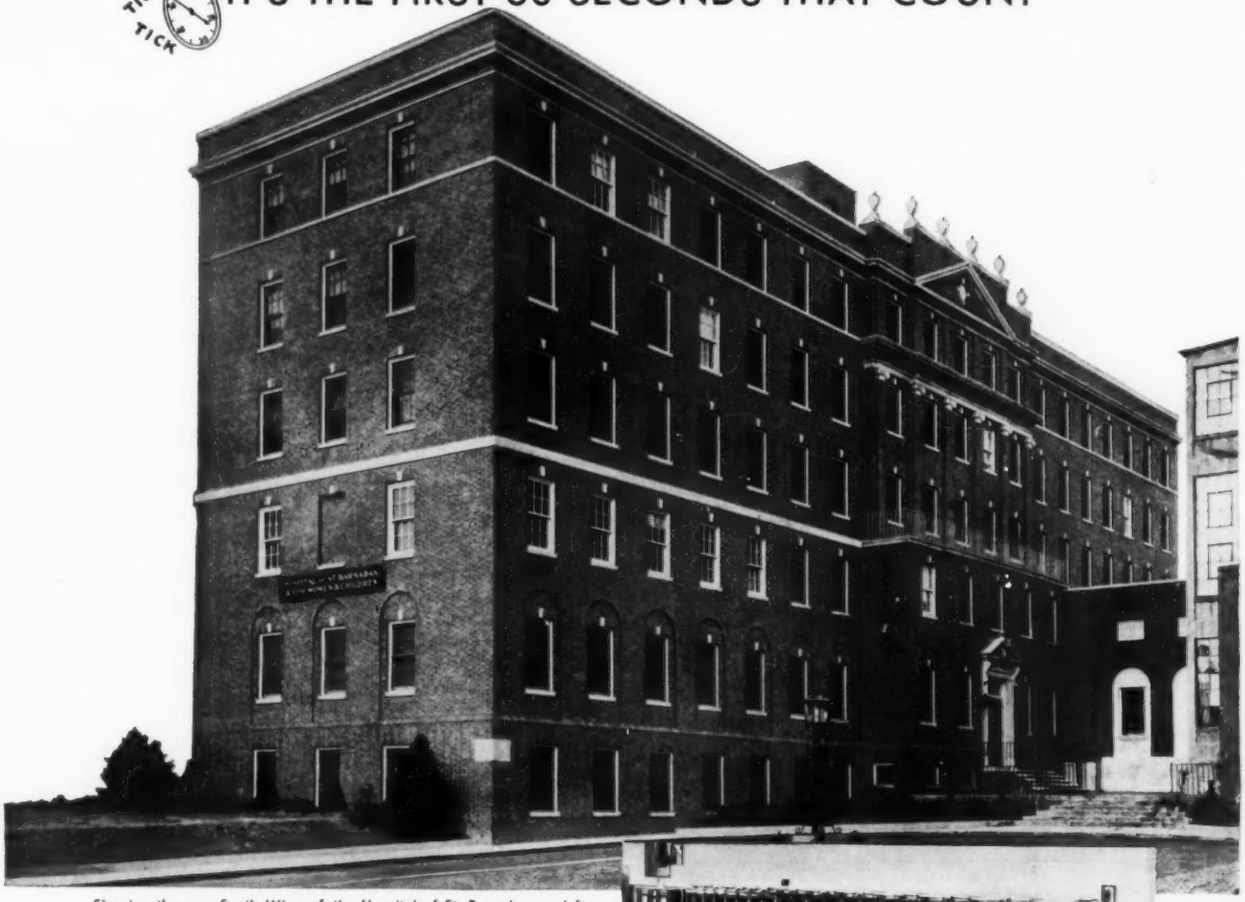

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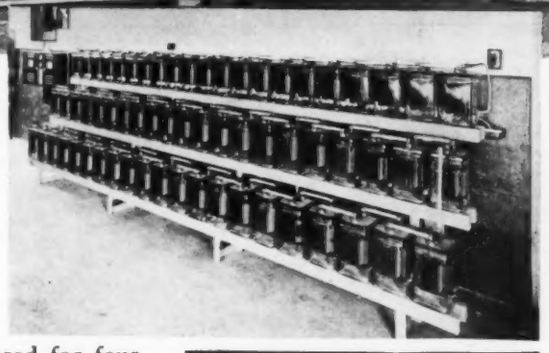

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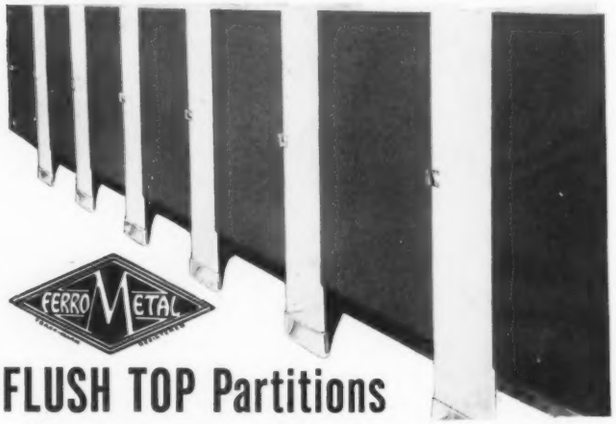

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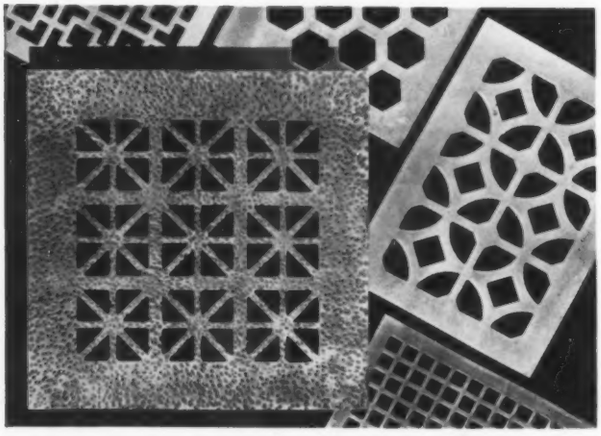

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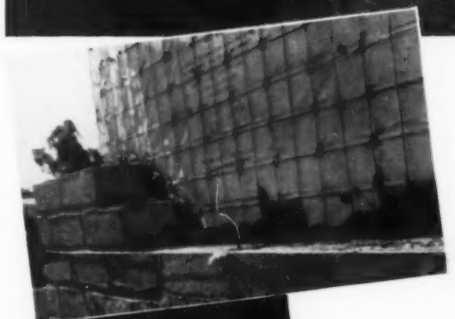

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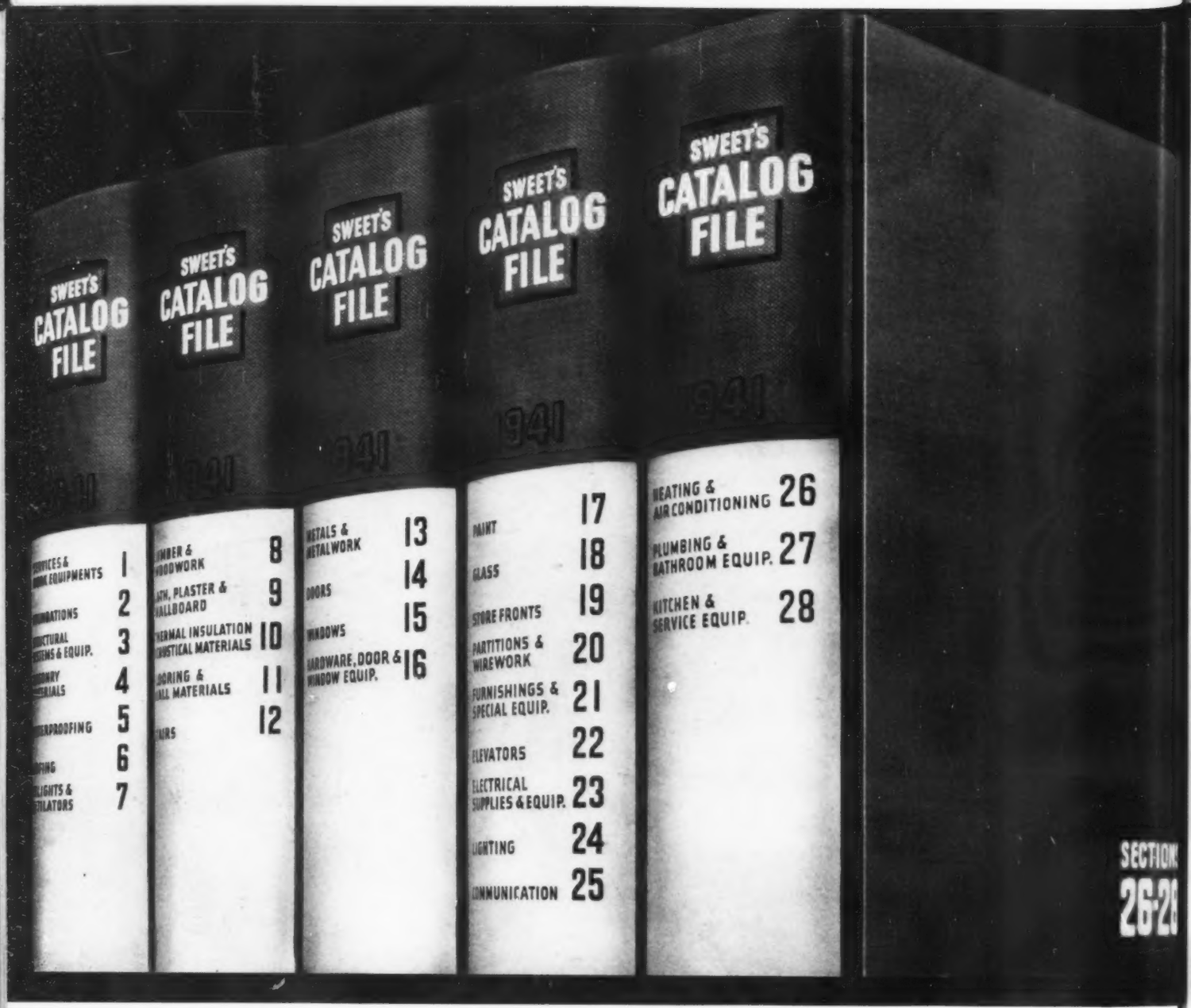

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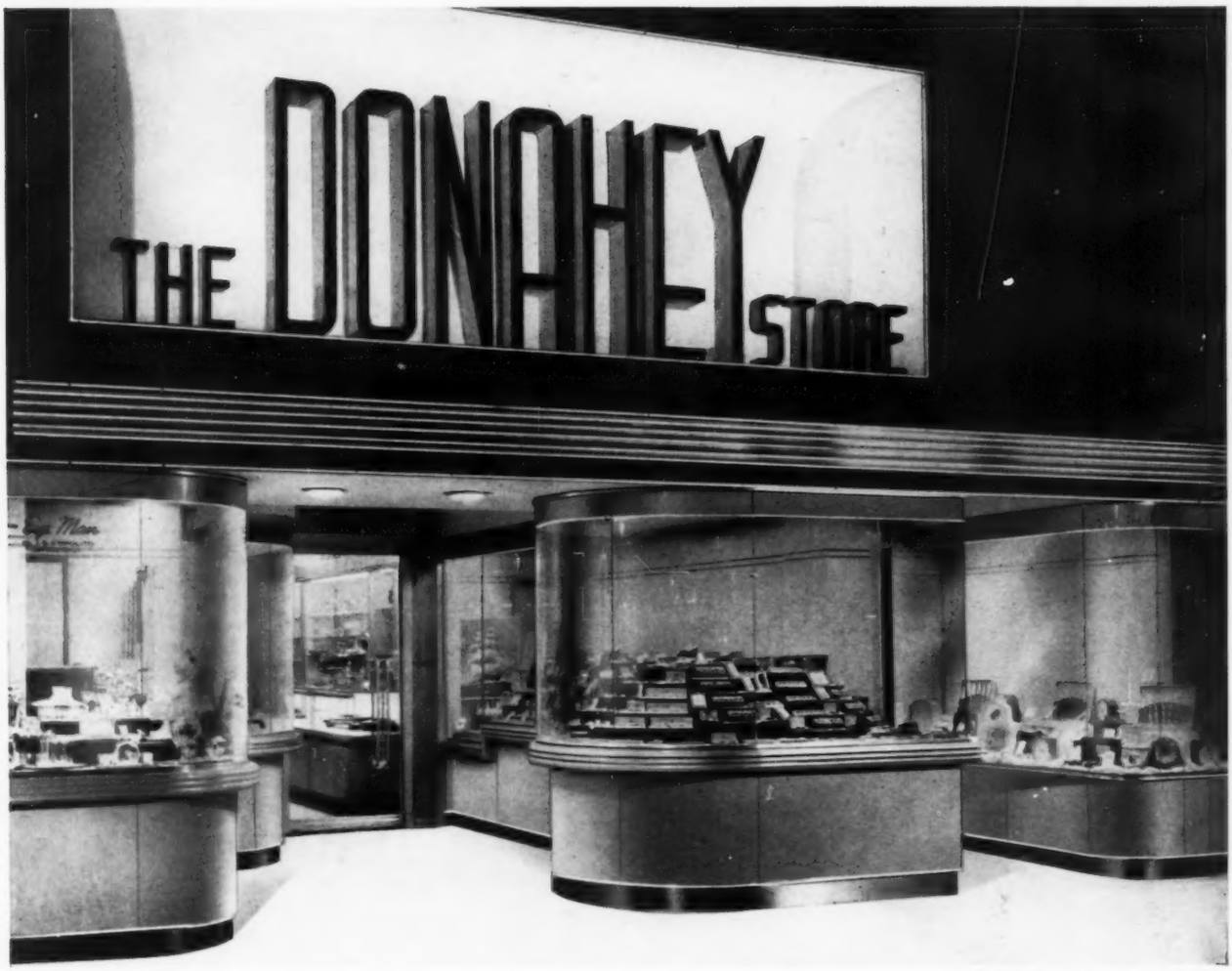

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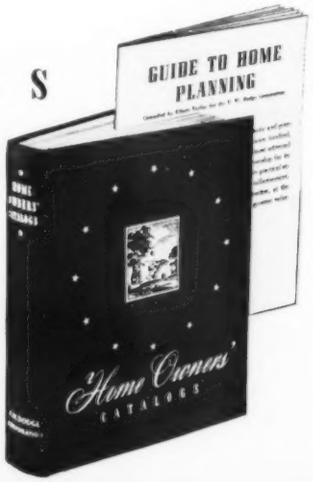

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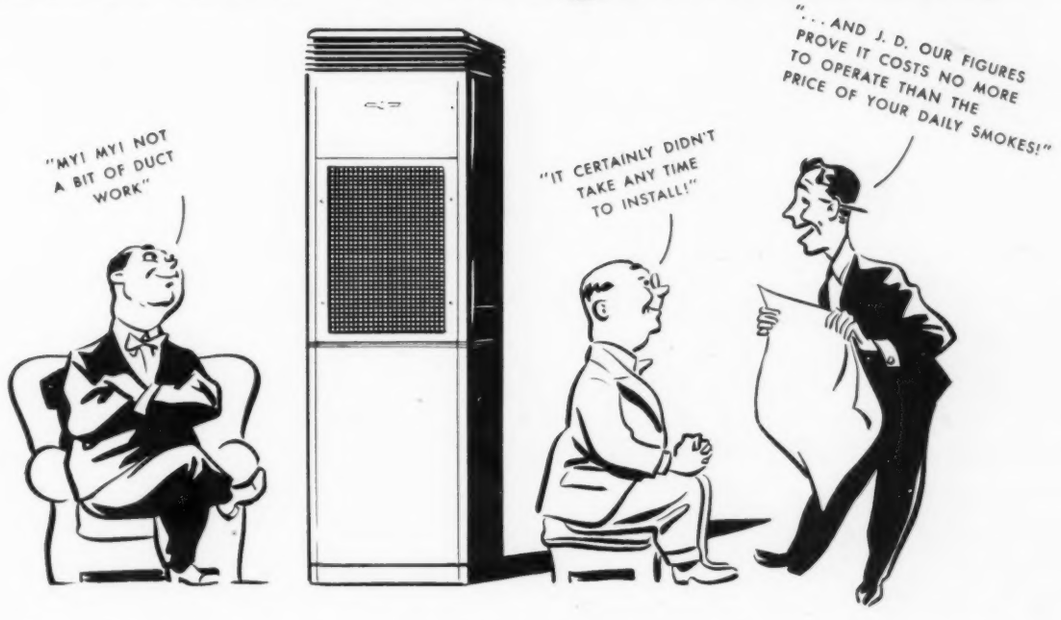
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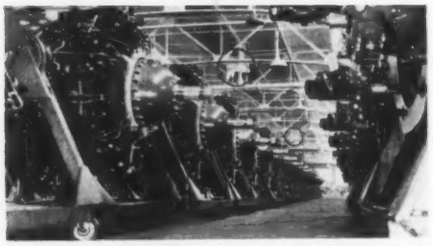

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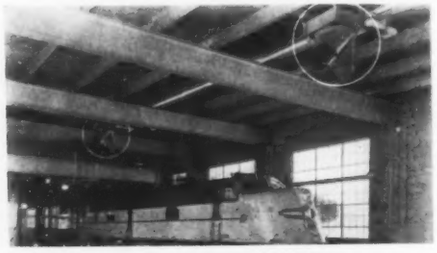

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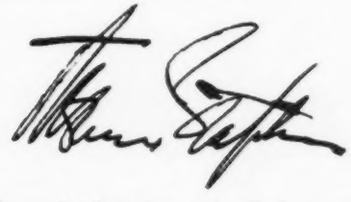
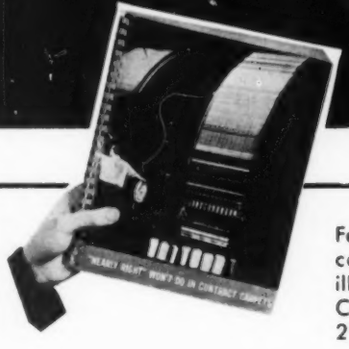


Thomas Stapleton is a nationally known architect, particularly for his design of educational buildings, theatres and auditoriums. (The carpet is Alexander Smith Crestwood.)



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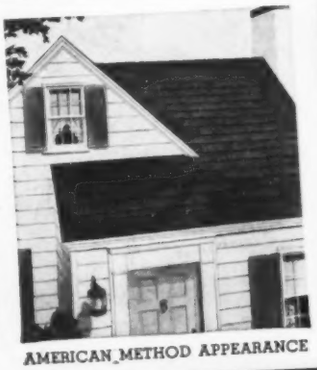

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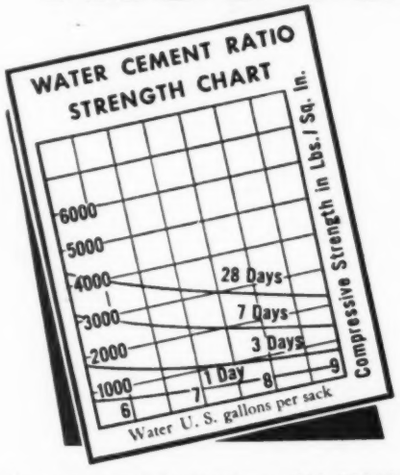

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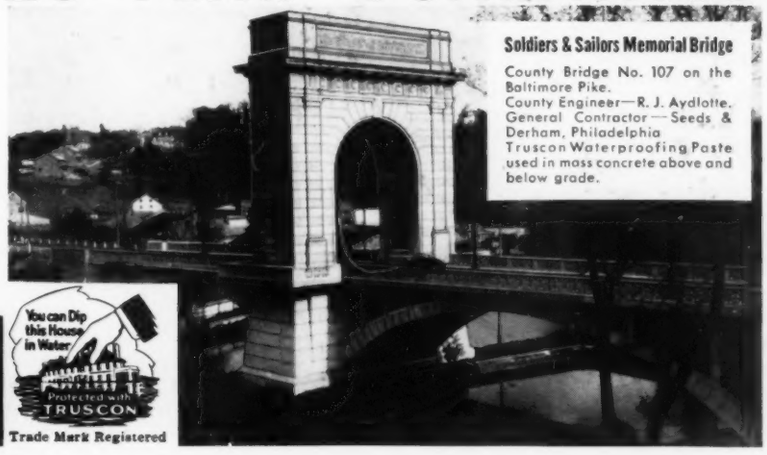

Soldiers & Sailors Memorial Bridge

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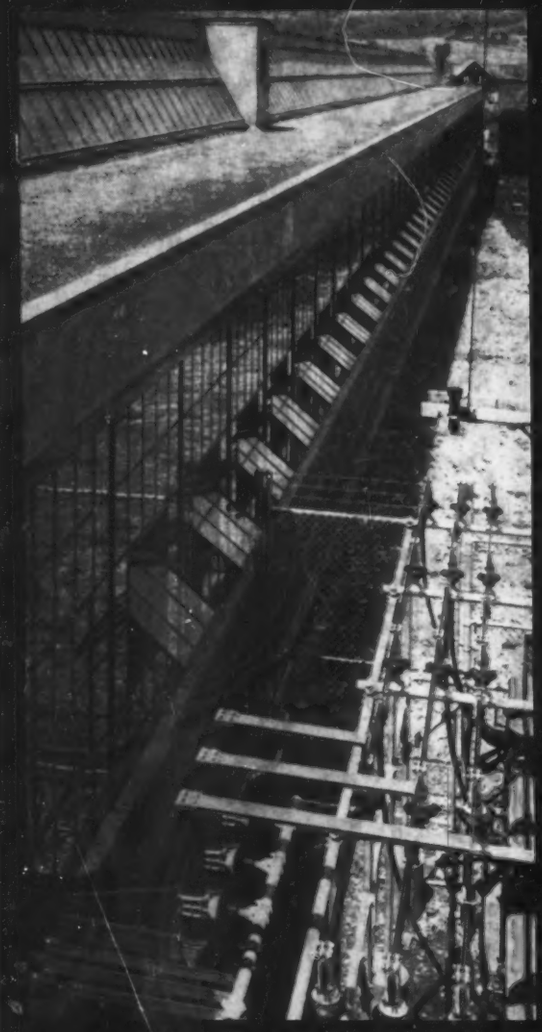

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